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Original Articles.

DECREASING DIABETIC MORTALITY: INCREASING INCIDENCE OF GLYCOSURIA.

By Elliott P. Joslin, M.D., Boston.

Deaths from diabetes per 100,000 in the registration area of the United States reached the peak in 1915 when they were 17.5 per 100,000. In the five successive years they have decreased, respectively, 17.1, 17.0, 15.9, 14.9, and 16.1. This has been coincident, by the way, with an increase in the per cent. of population included in the registration area, which has risen from 70.2 per cent. in 1916 to 82.3 per cent. in 1920.[1] Up to 1915, the diabetic death rate per hundred thousand had consistently risen since the first available data in 1880, at which time it was recorded as 2.8 per 100,000. At no time was there a retrogression exceeding over 0.2 per cent. The Federal figures are confirmed by the diabetic death rate in Boston, namely, 26.1, which reached in the same year, 1915, a corresponding peak. Since this period it, too, has fallen, and as follows: 25.2, 19.1, 17.0, 22.9, 23.3, and 19.5. The lesser regularity of the decline is presumably due to the smaller mass of the material. In 1919, the number of diabetic deaths was 171, and in 1920 was 175, but now again comes the welcome news, published in the Monthly Bulletins of the Health Department of the City of Boston, that for 1921 the deaths from diabetes were 148, in contrast to 175 for 1920.

These decreasing diabetic mortality rates are all the more encouraging because they might have been expected to rise as a result of a more liberal food supply following undernutrition during the period of the war. It is well known that diabetes decreased with the rigid dietetic restrictions in Germany during the later years of the war, but whether abundant nutrition in that country will restore the former incidence of the disease will be awaited with great interest. The effects of undernutrition and overnutrition will stand out, then, in clearer relief. It will take some years, however, to settle this question, because diabetic cases now live so many years that, save for deaths from diabetic accidents, an immediate increase in diabetic mortality is hardly to be expected.

The decrease in diabetic mortality is by no means wholly attributable to a lessened frequency of the disease. It reflects better treatment. Between the years 1898 and 1913, the average duration of life of 940 fatal cases of diabetes in Boston for which data were reported was 3.3 years. In 1915, the duration of 116 fatal cases was 4.3 years, and for 1920 the average duration of 117 fatal cases was 5.3 years. The average Boston diabetic lives more than half again as long with his diabetes today as he did in the period preceding 1914. The decreasing percentage of diabetic deaths in hospitals has already been widely recognized, but the skeptics said it was due largely to other causes than improved therapeutic methods. Now they must not only explain why 28 out of every 100 diabetic cases admitted to the Massachusetts General Hospital before 1914 died in its wards, in contrast to the two fatalities in 98 admissions in 1920, but also why the average diabetic in Boston before 1914 lived 3.3 years and in 1920 lived 5.3 years.

As an offset to this pardonable feeling of elation and civic pride, it is, perhaps, fortunate that the Metropolitan Life Insurance Company, in its *Statistical Bulletin* for November, calls attention to the reports of one of their laboratories which show that in the year 1919, for 1,000 urines examined, six showed sugar, but in 1921 the ratio was nearly double, or 11 per 1,000. (*Statistical Bulletin*, Metropolitan Life Insurance Co., November, 1921, *2*, p. 2.) The report further indicates that these increases in the frequency of the discovery of sugar were confined to small percentages of sugar. Fortunately no increase was observed in percentages of sugar above 0.75 per cent. Concern is therefore manifested, not so much with the number of diabetics discovered as with the possibility that all these persons with mild glycosuria may be prediabetic cases who, if not watched, will develop frank diabetes in the near future.

A cause suggested in the *Bulletin* for this increase in the frequency of sugar reactions is the greater consumption of sugar, owing to its cheapness, its substitution for the use of alcohol, or even to the wider use of malt beverages. There are objections to such reasoning. It is true that there has been a steady growth in successive decades in the consumption of sugar in the United States. Thus for the years 1900-1910 the yearly average pounds per capita was 65 pounds, and for the years 1910-1917 the yearly average was 73 pounds. If one, however, examines the data for the individual years 1912-1921 (Table 1), it will be observed that the variation in sugar consumption per individual, in this country, has not been very great. It reached its maximum of 85 pounds in 1913 and its minimum in 1918, when it fell to 73 pounds. In the year 1919, it rose to 85 pounds (85.43); in 1920, to 87 pounds (86.56); but in 1921, when the great increase in sugar reactions was noted by the Life Insurance Company, it had fallen to 84 pounds (84.47), or almost precisely the same quantity as in 1919, when the Insurance Company found only about half as many urinary sugar reactions.

TABLE 1.
TOTAL CONSUMPTION OF ALL SUGAR IN THE UNITED STATES.

YEAR	PER CAPITA
1912	81.3 lbs.
1913	85.4
1914	84.29
1915	83.83
1916	79.34
1917	78.58
1918	73.36
1919	85.43
1920	86.56
1921	84.47

(*Weekly Statistical Sugar Trade Journal*, 1922, 2, p. 15.)

It is unnecessary to comment upon the possibility of an increase in malt as accountable for these increased sugar reactions, because such increase does not appear probable. In answer to the question (usually partisan) whether Prohibition is in any way responsible for the increased frequency of glycosuria at insurance examination, the writer's belief is: (1) the actual frequency of diabetes has decreased coincidently with the rarer appearance of fat people on the street, and (2) the apparently contradictory increase in glycosuria must be otherwise explained than by sugar or alcohol.

For comparison with the increased number of sugar reactions noted by the Metropolitan Life Insurance Company the following data are presented. Three hundred successive case histories of supposedly non-diabetic patients coming to my office were searched and it was found as a result of routine urinary examinations that reactions for sugar in the urine were present in 50 instances, or at the rate of 165 per 1,000. The sugar was quantitatible in 25 of the cases. Subsequent study showed that but one of the fifty individuals was a frank diabetic. Comparing these data with those furnished by the Metropolitan Life Insurance Company, it will be noted that whereas in 1921, out of 1,000 urines which were examined, there were 11 reactions for sugar, the rate at the office of a private practitioner was 165, or 15 times as many. It might be claimed by those unacquainted with the facts that my patients came to me knowing my interest in diabetes. This, however, is not true, as not one of the number suspected the presence of diabetes or of sugar in his, or her, urine. In explanation of the divergence of the Insurance Company's results and my own, it is suggested that the individuals examined by the Insurance Company were supposedly well, while the individuals examined in my office were ill.

The number of individuals carrying insurance and applying for insurance is rapidly increasing and much more so in the recent five years than formerly. This is clear from the accompanying table (Table 2).

Table 2.

LIFE INSURANCE POLICIES IN FORCE IN THE UNITED STATES.

Year	No. of Policies	Population	Per Cent.*
1880	608,681	50,155,783	1
1890	1,276,167	62,947,714	2
1900	3,071,253	75,994,575	4
1910	6,040,617	91,972,266	7
1915	8,284,281	100,399,318 est.	8
1920	13,199,605	105,710,620	12

When the number of policies in force rose from 8 per cent. in 1915 to 12 per cent. in 1920, and the number of policies issued from 1.1 per cent. in 1915 to 2.3 per cent. in 1920,† the insurance clientele may have been no longer entirely confined to the well, but may have been recruited in part from individuals on the border line of disease. These latter individuals, as shown by my data, are 15 times as liable to have traces of sugar in the urine as the healthy. The records of the draft support this view. It will be recalled that the percentage of men examined for the draft, who had a military defect which was considered of sufficient importance to note at the time of the physical examination, was 46.8 per cent. It is only fair to state that opposed to this explanation are the statistics of insurance companies, which indicate that their mortality from recent insurance is better every year, that their rejection ratio is constantly decreasing, and that their total mortality experience is improving.

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DIVIDED MEALS FOR SEVERE DIABETICS.

By H. Gray, M.D., Boston.

[From the New England Deaconess Hospital.]

THEORY OF MULTIPLE MEALS.

Despite the paucity of data, certain reasons for anticipating value from the division of a diabetic's day's quota of food into small quantities frequently given, may be found in scattering observations in the literature on inanition glycosuria (and more recently inanition hyper-glycemia), upon the lessened glycosuria and hyper-glycemia following the repeated intake of glucose, and on multiple meals of glucose or starch.

Inanition Glycosuria. The increased tendency to glycosuria as a consequence of fasting, has been mentioned by Lehmann 1873, Claude Bernard 1877, Hofmeister 1890, who named the phenomenon "marantic glycosuria" or "hunger diabetes"; Naunyn 1898, Hoppe-Seyler 1900, who added the terms "vagabond diabetes" or "tramp glycosuria"; Bang 1913, Allen 1913 and 1920, Mogwitz 1914, Allen, Wishart and Smith 1919, and finally MacLean and DeWesselow 1921 (inanition hyperglycemia).

The importance of the phenomenon was urged by Naunyn, but little by any other writer, and indeed, Allen, Wishart and Smith regarded it as "trivial."

The explanation of the phenomenon has been rather vague, but still uniform: some state of temporary unpreparedness for the carbohydrate flood.

Lessened Glycosuric and Glycemic Reactions to Glucose or Other Food when Taken at Short Intervals. The fact that a second dose of glucose, given when the glycemic reaction following the first dose has declined or is still declining, produces a smaller rise than the first dose, has been noticed by Bang, 1913, in rabbits, and in man by Menke 1914, Hamman 1919, MacLean and DeWesselow 1921, and Staub 1921 (Bahnung or canalization).

Much the same law, but in a more general and clinically more important form, is that the blood sugar peak is less following carbohydrate or a mixed meal containing carbohydrate given a short interval, say two and one-half to three hours after the preceding meal, than when the period between meals is the usual four or five hours. This was noted in man by Naunyn 1898 (*re* urine sugar only at that time), Menke 1914 (with four isocaloric meals), Sakaguchi, Kasai and Kin 1915, Sakaguchi 1918, and lastly by Benedict, Osterberg and Neuwirth 1918.

The explanation offered by most of these writers, Naunyn, Bang, Sakaguchi, Benedict, Hamman, MacLean and DeWesselow, Staub, apparently independently, is practically identical with that cited above for inanition glycosuria, namely, that the fasting pancreas or liver is not ready for glycogen formation, but that once this has been started by the stimulus of the absorbed sugar, the organism becomes able to transform the sugar to glycogen and to retain it. Indeed, Sakaguchi, Kasai and Kin reasoned that, once under way, glycogen formation, like various other organic processes, functions more abundantly than seems necessary to the needs of the moment, so that at certain hours after the ingestion of carbohydrate, glycogen formation far exceeds sugar intake, and the blood sugar accordingly sinks to a subnormal value (secondary hypoglycemia).

This usual explanation throws light, according to Naunyn and to Hamman, on the better utilization of slowly absorbable carbohydrate and the almost unlimited power of the body to metabolize starch.

The preceding experimental results show besides, according to Staub, how important it is to follow Von Noorden's prescription, especially in an early case of diabetes. First, to determine the limit of tolerance and to begin dietetic treatment from this limit of tolerance and not from a carbohydrate free diet. For if even a little carbohydrate tolerance exists, then the preparedness for carbohydrate assimilation is preserved, and if the treatment is introduced needlessly with a carbohydrate free diet, then that preparedness is lost and the tolerance which has been decreased by the metabolic disturbance is still further decreased by the physiological lack of preparedness. With this declaration, the present writer, like other pupils of Joslin, is in the heartiest accord.

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*Per cent. of population to policies in force.

†Unfortunately, the statistics for the year 1921 are not at hand.

Another explanatory factor has been brought forward by Benedict, Osterberg, and Neuwirth: "The very high sugar elimination reached as a result of the *addition* of 20 grams of dextrose to a meal . . . appears to lend considerable support to the view held by several students of diabetes, that the *internal* function of the pancreas may suffer while the gland is active during digestion. Unless some such view is taken, it is difficult to understand why, as in our experiments, dextrose added to a meal is more poorly tolerated than when taken on an empty stomach. . . . Thus our results seem to show unmistakably that dextrose taken with a meal may constitute a strain on the carbohydrate metabolism."

Interference with the internal secretion (hormon) of the pancreas by simultaneous demands on the external secretions, as mentioned in the foregoing paragraph, is worth a few words, because it throws light on the desirable distribution of the food between the regular and activating meals. In the latter, we have been putting most of the carbohydrate, leaving the larger meals mainly protein and fat. The obvious alternative would be to give all the meals as mixed meals. Theoretically, there is something to be said for each alternative. Practically, one finds few opinions and fewer facts. In the course of reports on oat and other starch-cures, the view has been ventilated that such beneficial results as have been obtained have been due to the fact that the food has been administered as (at least relatively) pure carbohydrate, and has, therefore, been free of any protein effect. This view has been urged by a marked minority, but none the less, its mechanism seems worth wider consideration than has yet been reported. Therefore, without reviewing here all the literature examined in this connection, we may briefly point out some of the speculations as to the mechanism of this supposed protein effect. All this, at the outset, after making allowance for the carbohydrate moiety of the protein molecule. Protein may (1) irritate or stimulate metabolism, thus making an excessive demand on damaged functions (*e.g.*, Von Noorden 1902 and 1903, Blum 1911, Klemperer 1911, Minkowski 1911, Magnus-Levy 1911), or (2) cause excessive mobilization of sugar (*e.g.*, Kolisch 1899), or (3) cause a demand on the external pancreatic function (*e.g.*, Cohnheim and Klee 1912), which may be equivalent to a drain on the connected sympathetic nerves, with resulting lessened efficiency of those or related nerves in regard to the internal function of the pancreas.

The details of the fascinating work of Benedict and his colleagues, and of Sakaguchi *et al.*, deserve lengthier critical analysis, and this the writer has made, but omits here for the sake of brevity.

The possibility of applying these experimental observations and theory to practical treatment was suggested by Benedict, Osterberg and Neuwirth in the following words: "The point might be of therapeutic interest and is very easy of application. Five, ten, or twenty grams of dextrose would probably be the right amount for preliminary trial, given two hours before the meal. An exact determination of the urinary sugar for two hours following the same meal, with and without previous ingestion of dextrose, would be needed to determine the effect."

Specific opposition of these views, however, exists, to wit, on the part of such experienced students as Allen, Stillman and Fitz, who wrote, in 1919, that "little is to be hoped from unusual fractionation."

Summing up this section, it seems fair to say that the observations and assumptions quoted indicate the need both of further experimental evidence and some bedside experience. To make a beginning in the direction of the last named, is the purpose of this paper. The plan of attack, as defined in the quotation from Benedict, Osterberg and Neuwirth, has been tried in this clinic, though we have used 5 or 10 per cent. fruits (grapefruit or orange), or 5 per cent. vegetables, since we are not prepared to agree with those who accept Klemperer's or any other observations yet published, as adequate proof that pure glucose "can be given to diabetics without harm."

Administration of the diabetic diet in small quantities and at frequent intervals. Literally speaking, this has, in fact, been reported by a few. Naunyn, in 1898 and 1906, gave five grams of dextrose 20 times in twenty-four hours in addition to the patients' other food. Von Noorden, in 1903, in practising his oat cure, gave oatmeal soup every two hours. Minkowski, in 1911, gave 50 grams of oat flakes five times a day. Blum, in 1911, divided the food for his diabetics into five or six meals a day in connection with an oat or wheat cure, totaling 250 grams flour in twenty-four hours. Klemperer, in 1911, gave 15 grams of dextrose every hour for seven to ten doses. Knerr, in 1913 and 1915, regularly began treatment by allowing nothing whatever, except a dram of raw cornstarch, stirred in a glass of warm water, every two hours until aglycosuria, in obedience to "just two basic principles which

I would announce as essential in the treatment of all diabetics, acute or chronic . . . carbohydrates continuously and . . . in such form as to be most slowly absorbed . . . *i.e.,* raw . . . green vegetables of all kinds . . . flour . . . cornstarch . . . " The conception of carbohydrates continuously has also been elaborated by Woodyatt, in 1916, and recently by Shaffer. The primary value of this conception seems to be more in combating acidosis than in spurring on metabolism. Troje, in 1918, gave his diabetics five meals at two-hour intervals.

The object of these divided doses, however, in the few cases where stated, for example, by Klemperer, was "to avoid flooding the organism with sugar." This was not, it must be noted, at all the same motive as ours, which is not merely to avoid harm, but to discover whether some positive good may ensue from placing the load on assimilation at particular intervals and by means of what we have come to call "activating meals," as suggested by E. P. Joslin, in whose clinic and under whose guidance have been carried on both this study and the more exact metabolic investigation of a remarkable case which is being reported by Murayama.

In none of the above reports has the experiment been made of giving the same amount of food divided in the usual three meals over a control period of a few days, followed by a test period with the same food divided into six meals. Furthermore, little evidence is traceable as to the blood sugar after meals coming four hours or more after the preceding meal, compared with the blood sugar after a meal coming only two hours after the preceding meal. Both these procedures will be shown below in data from this clinic.

Another possible advantage of fractional feeding has been suggested by A. A. Hornor. It may facilitate detection of slips in diet. For when a patient picks up morsels at odd moments, he is apt to do so around the time of one of the smaller feedings, and therefore may betray himself by glycosuria after that lighter load, rather than after a regular meal, when, if at all, it would naturally occur during adherence to diet.

USE OF SPLIT MEALS IN PRACTICE.

Indication for Multiple Meals. Diabetics studied in this connection have not been mild cases, because in such patients the trouble, both for them and for the nurses, is unnecessary. But for moderately severe patients (*i.e.,* those who, on one gram of protein per kilogram, or, if a child, two grams per kilogram, could not remain sugar free with 50 grams of carbohydrate) and for severe patients (*i.e.,* those who with protein as above stated could not tolerate more than 10 grams of carbohydrate), the method seemed worth trying.

After the patient's diet had been raised according to usual methods, as high as was possible, and had remained essentially unchanged for at least three days, and generally more than a week, while the blood sugar remained stationary, the diet was changed only by splitting off part of the allowance of carbohydrate from the regular meals and giving it as extra meals. The *total* carbohydrate, protein, and fat was *kept the same.* At the outset, the type-schedule was planned with six meals, though occasionally, to pacify the patient, some minor modification was allowed, such as a seventh meal at bedtime.

Split Meal Schedule.

1. Intervals between Meals: Two and a half (2½) hours, never less, except that the first activating meal (the keystone of this technic) may be taken any time between 1 and 2½ hours before the regular breakfast. For an example, see Table 1.
2. Caloric Value of Meals: Of the extras, the first must be the smallest meal of the day. Of the main meals, the regular breakfast is to be the smallest, the smaller the better.
3. Composition of Activating Meals: Practically pure carbohydrate, generally most conveniently administered, as orange, grapefruit, or 5 per cent. vegetables.
4. Calculation: Since this is complicated, it is best shown by an example: Table 1. First, we agree on the hours for eating. Next, we plan the division of the carbohydrate and total cal-

TABLE 1.
CALCULATION OF A SPLIT MEAL SCHEDULE.

Meal	Hour	Food								
		Plan		Given As		Detail				
		CH	Cal.			C	P	F	Cal.	
1st Extra	5:30 to 7:00	5 or less		Orange	50	5	0	0	20	
Breakfast	8:00	6	150–200	5% vegetables	150	5	3	0	32	173
				20% cream	30	1	1	6	62	
				Egg	1	0	6	6	78	
2nd Extra	10:30	5		Grapefruit	100	5	0	0	20	
				Egg	1	0	6	6	78	
Lunch	1:00	9	300	5% vegetables	210	7	4	0	44	323
				Bacon	30	0	5	15	155	
				Cream	60	2	2	12	124	
3rd Extra	3:30	5		Orange	50	5	0	0	20	
Supper	6:00	10	300	5% vegetables	240	8	4	0	48	332
				Bacon	15	0	3	8	84	
				Meat	30	0	8	5	77	
				Cream	60	2	2	12	124	
Totals		40				40	44	70	966	

ories, say, for a patient on a diet of carbohydrate 40, protein 40, fat 70, calories 950. Then we distribute the patient's present items of diet, as far as possible, to fit the plan, making changes when necessary. Finally, we figure the details to make sure the totals approximate those with which we started planning. If the patient's carbohydrate tolerance were half as great, we should at present omit the vegetables from the meals, thus lowering the carbohydrate intake to 20 grams, given mostly apart from the protein-fat meals.

RESULTS.

Case 1. Patient No. 1254 came under observation at the age of 11 years, 11 months, when the duration of his diabetes had been only 11 days, showing 0.6 per cent. urinary sugar. After three days of treatment, on the last of which his diet was carbohydrate 20 grams, protein 38 grams, fat 0, calories 232, he became sugar free. On the morning on which ended his first sugar-free 24-hour amount, the blood sugar was taken (fasting, as has been our practice, unless otherwise specifically stated), and was 0.15 per cent. After about a month's further treatment, he was discharged on a diet of C. 92, P. 71, F. 86, Cal. 1426, on which he had been for five days with a fasting blood sugar of 0.07. (See Table 2.)

His second admission occurred when the duration was two years and two months, with glycosuria of 0.4 per cent., and with a blood sugar of 0.24 per cent., and again after about a month's treatment, he was discharged on a diet of C. 86, P. 78, F. 65, Cal. 1241, on which he had been for six days, with a fasting blood sugar of 0.12 per cent.; in other words, on a slightly lower diet and with a slightly higher blood sugar than at the end of his first admission.

His third admission was at the duration of two years and five months, sugar free and with a blood sugar of 0.15 per cent., and this time, after about a month, he was discharged on a diet of C. 66, P. 58, F. 62, Cal. 1054, on which he had been for four days, with a blood sugar of 0.13 per cent. Again it is seen that his tolerance had fallen off slightly since the last admission.

His fourth admission was at the duration of two years and nine months, with 3.2 per cent. of sugar in the urine, and with a blood sugar of 0.22 per cent., and a week later he was discharged on a diet of C. 15, P. 68, F. 36, Cal. 656, with a blood sugar of 0.13 per cent. The decrease in tolerance around this time was, in part, due to neglect of urine examination, and in part to neglect of diet, owing to a certain religion.

His fifth admission was at the duration of four years and nine months, with a blood sugar of 0.38 per cent., and 6 per cent., or 88 grams, of sugar per 24 hours, in the urine. A week later, when he became sugar free, his blood sugar was 0.18 per cent. This time his tolerance had fallen off so much that it seemed worth while to attempt any method that gave even the slightest hope of improvement, and so a six-meal schedule was instituted. After three days of this, his blood sugar was 0.21 per cent., and three days later, 0.22 per cent., or for the 6-day period, 0.21 per cent. Then the carbohydrate was decreased by 10 grams and the fat increased by about 10 grams, giving a slightly greater number of calories, with the result that the next three blood sugars, covering this 9-day period, averaged 0.15 per cent. Then precisely the same meals were given, but with insistence on the 2½-hour interval specified in the schedule quoted; the next three blood sugars, over a period of 19 days, averaged 0.13 per cent., and, furthermore, the final blood sugar was only 0.11 per cent. The patient was therefore discharged on the same diet: C. 40, P. 43, F. 70, Cal. 962.

TABLE 2.
PATIENT NO. 1254, BORN APRIL 11, 1905, ONSET MARCH 1, 1917.

No. of admission	Age		Duration			Date B. S.	Diet				Days on diet	Ur. sg. g. 24h.	B.S. (∫) %	W net		
	y.	m.	y.	m.	d.		C	P	F	Cal.				lbs.	oz.	
						1917										
1	11	11			14	Mar. 15	20	38	0	232	1	0	.15	77	1	
						Mar. 28	64	65	86	1290	2	0	.10	76	3	
						Apr. 9	91	70	82	1382	4	0	.10	76	9	
						Apr. 17	92	71	86	1426	5	0	.07	77		
						1919										
2	14	0	2	2		Apr. 21							.24			
						Apr. 23	51	48	49	817	1	0	.24	85		
						Apr. 29	65	73	21	741	3	0	.13	83		
						May 6	68	67	37	873	2	0	.08	81		
						May 20	85	77	59	1179	6	0	.10	89	4	
						May 24	86	78	65	1241	3	0	.11	90		
						May 26	86	78	65	1241	6	0	.12	88	4	
3	14	4	2	5		Aug. 5	7						.15			
						Aug. 8	75	45	0	480	2	0	.22	78		
						Aug. 13	36	59	6	434	3	0	.13	79		
						Aug. 25	61	58	57	989	4	0	.12	77		
						Aug. 30	66	58	62	1054	4	0	.13	76		
4	14	8	2	9		Dec. 8					1	114	.22			
						Dec. 12	0	18	0	72	1	0	.13	83		
						Dec. 15	15	68	36	656	1	0	.13	82		
						1921										
5	16	8	4	9		Aug. 5	64	45	12	544	1	88	.38	73	12	
						Aug. 12	0	6	6	78	1	0	.18	76	14	
						Aug. 30	50	40	62	918	3	0	.21	74	8	B.S. Av 0.21
						Sept. 2	50	40	62	918	6	0	.22	73	12	
						Sept. 6	40	43	70	962	2	0	.14	76	8	B.S. Av 0.15
						Sept. 9	40	43	70	962	5	0	.16	72	12	
						Sept. 13	40	43	70	962	9	0	.16	74		
						Sept. 16	40	43	70	962	12	0	.14	73	4	B.S. Av 0.13
						Sept. 20	40	43	70	962	16	0	.15	73	12	
						Sept. 23	40	43	70	962	19	0	.11			

These observations, like most clinical notes, are by no means conclusive, but indicate sufficient improvement, under the divided régime, to be distinctly worth reporting. A considerable number of similar observations have been made with other patients, with results which, though confirmatory, are hardly worth further space at present.

Case 2. Patient No. 1895 was admitted at the age of 14 years, 11 months, when the duration of his disease had been one month. His blood sugar was 0.09 per cent., and he was discharged on a diet of C. 75, P. 72, F. 54, Cal. 1074, with a blood sugar of 0.11 per cent. (See Table 3.)

His next admission was at the duration of 11 months, with a blood sugar of 0.21 per cent., and he was discharged on a diet of C. 63, P. 80, F. 75, Cal. 1247, with a blood sugar of 0.13 per cent.

His third admission, at the duration of 15 months, showed that he had lost much more ground, apparently from neglect of advice, than during the interval between his first and second visits; instead of being sugar free, as on both those admissions his urine contained 6.6 per cent., or 60g., and his blood sugar was 0.27 per cent. On this occasion, the six-meal schedule was begun, without waiting to work up the patient's diet first, but making increases while he was using divided meals. After the diet had been raised to C. 40, P. 45, F. 78, Cal. 1042, his blood sugar was 0.23 per cent. This looked much worse than his condition on June 13, five months before, but the diet was continued without change, and the blood sugar taken three times, at three- to six-day intervals, averaged 0.14 per cent. From this it was felt that his condition was better than it would have been with a three-meal schedule.

TABLE 3.

PATIENT NO. 1895, BORN SEPTEMBER 10, 1905, ONSET JULY, 1920.

No. of times admitted	*Age at admittance*	*Duration*	*Date of B. S.*	*Diet*				Days on Diet	Urine Sug. [illegible]	Fasting B.S. %	*W net*
				C	*P*	*F*	*Cal.*				
			1920								
1	14y. 11m.	1m.	Aug. 17						0	.09	109 6
			Aug. 24	75	72	54	1074	1	0	.11	108
2	15y. 9m.	11m.	1921								
			June 2						0	.21	116 8
			June 7	33	67	64	976	1	0	.13	116 12
			June 13	63	80	75	1247	4	0	.13	113 8
3	16y. 1m.	15m.	*Oct. 25	1	7	12	140	1	0	.27	104
			Nov. 2	20	41	63	811	2	0	.18	101 4
			Nov. 9	40	45	78	1042	3	0	.23	99 8
			Nov. 15	40	45	78	1042	9	0	.16	100 12
			Nov. 22	40	45	78	1042	16	0	.13	103 4
			Nov. 28	40	45	78	1042	20	0	.14	103 4

*Oct. 26 split meals instituted.

In order to prove this conclusion out more clearly, it was decided to lump his meals again into the ordinary allowance of three a day, but unfortunately the patient left hospital against advice.

Besides studying the effect of extra meals by blood sugars following a period of three days, we have studied the blood sugars after a given meal which has, in one case, been preceded by an activating meal, and in another case, without the extra meal. This was done with patient No. 1895, as shown in Table 4.

Table 4 shows that when the activating or true breakfast was omitted, the blood sugar, after the second or regular breakfast, was not higher, thus disappointing us. The urine, however, showed more sugar than when the first breakfast was given. Inasmuch as this larger excretion of sugar was preceded by less actual carbohydrate and calories,—*i.e.*, only one breakfast,—the finding is paradoxical, except in the light of the theory with which this paper is concerned, and in the light of this theory is easily comprehensible. In order to answer the objection that the findings just mentioned differ so slightly as to be within the range of accident, it seemed worth while to repeat the experiment, and this was done under the same conditions, except for the deliberate reversal of

TABLE 4.

EFFECT OF USE OR OMISSION OF AN ACTIVATING MEAL BEFORE BREAKFAST.

Case II.

Prior Diet: C 40 — P 45 — F 78 — Cal. 1042 for 3 days.

Date	*Urine Sugar*		*Blood Sugar*
Nov. 9	0	0.23	Fasting
	0.3% = 0.7 g.	0.27	½ hour after regular second breakfast
	0	0.25	1 hour p. c.
Nov. 10	0.4% = 0.4 g.	0.26	½ hour after regular breakfast, first extra meal having been omitted
	0.8% = 0.3 g.	0.25	1 hour p. c.

Conclusion is that omission of first extra meal caused:

a No difference in the blood sugar, therefore no proof.
b Greater glycosuria, despite less CH and calory intake, therefore proof.

Repetition With Reversed Days

Nov. 15 as on Nov. 10	0	0.22	½ hour after regular breakfast, without preceding activating meal
	0	0.21	1 hour p. c.
Nov. 16 as on Nov. 9	0	0.19	½ hour after second breakfast
	0	0.20	1 hour p. c.

Conclusion is that omission of first or activating load produced:

a Higher blood sugar, i. e. proof.
b No glycosuria, i. e. no evidence.

the days; that is, on the first experimental day the breakfast was omitted instead of on the second. In this case the urine was no help to us, being sugar free, but the blood sugar was higher (both at the half-hour and one-hour period after the meal) on the day when the first breakfast was omitted. This finding seems to us to confirm the first pair of days and to support the hypothesis given.

SUMMARY.

The idea presented itself that a diabetic patient's ability to metabolize food might be stimulated by small meals, frequently given, in much the same way that immunity is produced.

The literature was rather carefully searched for relevant statements, and those found are briefly reviewed in the present paper, under the headings of Starvation Diabetes, The Lessened Glycosuric Reaction to Glucose on Repetition at Short Intervals, and The Clinical Use of Frequent Small Meals.

The theory of divided meals appears to be activation of the liver or pancreas by a small, preliminary meal of carbohydrate, given one or two hours before each main meal; the organism being then in action at the time of that regular meal responds to the food load more vigorously than with the every-day three-meal schedule.

The suggestion that the scattering experimental observations and views be verified by studies in man, is due to Benedict, Osterberg and Neuwirth.

Such confirmatory clinical data seem to be lacking, and are therefore here reported on the two most striking of the severe cases in which the method has been used under Dr. Joslin's supervision.

The results indicate that the method does help to lower the blood sugar.

The method is, therefore, advocated as having practical value.

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THE ADVANTAGE OF MULTIPLE MEALS IN THE TREATMENT OF SEVERE DIABETES.

BY T. MURAYAMA, M.D., BOSTON.

[From the New England Deaconess Hospital.]

SINCE Hofmeister's[1] description of "Starvation Diabetes," it has long been known that the fasting organism is more susceptible to alimentary glycosuria than the well-fed one. The recent advances in blood chemistry, especially the discovery of simple and accurate methods for determining sugar in the blood, have contributed not a little to the modern knowledge of metabolism. Staub's[2] experiment demonstrated the decreased power of assimilating carbohydrate under conditions which cause reduction of the glycogen deposits in the body, for example, after exercise or protein-fat diet. On the other hand, Bang[3] found in rabbits that the second administration of glucose during the decline of the hyperglycemia produced by the first, was followed by a much less marked reaction. This has been confirmed by Hamman and Hirschman[4] on normal and diabetic men. Staub[5] also found that the repeated administration of the same amount of glucose which caused a marked increase of the blood sugar at first is followed by a slighter increase and at last by no hyperglycemia.

It is also a well-known fact that in the vast majority of cases of diabetes the elimination of sugar after breakfast is the largest of the day, if each meal has the same composition. Sakaguchi[6] worked on this problem and demonstrated that the administration of small amounts of carbohydrate or meat two hours before breakfast, prevented or diminished the glycosuria which appeared after breakfast.

From the above data, we know that the intervals of time between meals is one of the most important factors which influences the metabolism of carbohydrate in normal men as well as in diabetics. The mechanism of this fact may be explained by supposing that it is partly due to inequalities in the digestive function, such as the motility of the stomach and the velocity of absorption of the sugar from the intestine, and partly due to the stimulation of the metabolic functions by the sugar first absorbed, so that the sugar subsequently absorbed is better assimilated. With these conceptions in mind, we tried to arrange the diet so that the diabetic patient could take carbohydrate with the least increase in the blood sugar.

SIX-MEAL SCHEDULE.

1. *Intervals between Meals.* Two and a half hours, except that the first activating meal may be taken any time between one and two and a half hours before the regular breakfast. For example: first extra, 5.30-7; breakfast, 8; second extra, 10.30; lunch, 1; third extra, 3.30; supper, 6.

2. *Calorie Value of Meal.* The first extra meal is to be the smallest meal of the day. Breakfast is to be the smallest of the three main meals, and the smaller it is, the better.

3. *Composition of Meal.* The extra meals to be mainly carbohydrate, generally in the form of fruit, because this is generally the most convenient.

REPORT OF A CASE.

Case No. 1542, woman, age 41 years, American, nurse. First visit, June 7, 1919.

Family History.— Father (65), mother (63), one brother and two sisters are all alive and well; one sister died of trauma. No hereditary diseases have been found except obesity in her mother and two sisters.

Past History.—Measles, whooping-cough, scarlet fever, and chicken-pox in childhood. Frequent sore throat and headache as young girl and till age 34.

Present History.—Beginning July 1, 1917, the patient had pruritus, polyuria, polyphagia, and loss of strength. Sugar was first discovered on August 1, 1917. Starch and sugar were omitted at once from the diet for one year; pruritis disappeared, but the urine was not sugar free. In the summer of 1918 she was admitted to a large general hospital, where she became sugar free in one week on a greatly restricted diet. An appendectomy was then performed under gas and oxygen. Glycosuria thereupon returned, reaching 39 grams in 24 hours. One day's fasting was followed by aglycosuria and the diet was gradually increased to carbohydrate 70 grams, protein 64 grams, fat 113 grams. Sugar appeared about five times in the succeeding three months on about 1200 calories and carbohydrate 40 grams. Upon this diet she did well and was able to work for three more months. In February, 1919, 1.0 per cent. of sugar was found, and the same amount noted in March and April, and 3.5 per cent. in May. On readmission to the same hospital, upon restricted diet, sugar was reduced to 0.3 per cent. in two days. Later, she consulted a local physician, who advised a very liberal diet and 50 grams of sodium bicarbonate daily. With this plan of treatment the excretion of sugar rose to between 30 and 60 grams. Having lost about 55 pounds since January, 1917, or 35 per cent. of her original body-weight, she entered this clinic in June, 1919.

Physical Examination disclosed a patient five feet, five inches in height, weighing 103 pounds, which is 27 per cent. below standard weight for her sex and age. Although thin, she was alert and agile. No pathological signs were observed, except ptosis of liver and kidneys. Blood pressure 104 systolic and 80 diastolic.

The urine was of specific gravity 1.024, acid in reaction, negative for albumin, gave a slight reaction for diacetic acid, contained 3.0 per cent. of sugar; and on microscopic examination it was free from casts, blood, and pus.

First Period at New England Deaconess Hospital (June 7, 1919, to June 26, 1919).

Preceding admission to the hospital the diet contained about 200 grams of fat administered as bacon, olive oil, cream, butter, eggs, and cheese. Glycosuria and ketonuria were present. The blood sugar* was 0.185 per cent. on the morning following admission. The CO_2 in the alveolar air† was 32 in terms of mm. pressure Hg. On the third day of admission, the urine became free from sugar and diacetic acid upon a diet of carbohydrate 10 grams, protein 17 grams, fat 0, calories 108. The diet was then gradually increased up to the 26th of June without the appearance of glycosuria or ketonuria. On this day the body-weight was 101 pounds, and the patient was discharged taking carbohydrate 22 grams, protein 69 grams, fat 48 grams, calories 816. The blood sugar on June 23 was 0.135 per cent.

Subsequent History. Living upon the same diet prescribed at discharge, sugar occurred upon several occasions during the subsequent six months, and the blood sugar fluctuated between 0.130 and 0.278 per cent.

Second Period at New England Deaconess Hospital (December 9, 1919, to January 12, 1920).

During this period every effort was directed toward bringing the percentages of blood sugar down to normal. This attempt, however, was in vain. The blood sugar always remained abnormally high—between 0.141 and 0.226 per cent. No glycosuria and ketonuria appeared throughout this period. The patient was discharged with a diet of carbohydrate 4 grams, protein 82 grams, fat 56 grams, calories 848.

Subsequent History.—The patient followed the diets, but after May 10, 1920, the glycosuria became constant, even on a diet so reduced as to contain carbohydrate 0, protein 18 grams, fat 18 grams.

Third Period at New England Deaconess Hospital (from January 16 to 27, 1921).

The low protein, high fat diet of Newburgh and Marsh[7] was tried. As is to be seen in Table 1, acetone and diacetic acid reactions persisted throughout this time. Glycosuria and blood sugar remained nearly constant.

Subsequent History.—The patient continued on the above diet after her discharge from the hospital, but on account of increasing acidosis was re-admitted to the hospital on March 15, 1921.

Fourth Period at New England Deaconess Hospital (March 15, 1921, to April 20, 1921).

Acidosis was now so severe that coma threatened. A +++ reaction for diacetic acid, an ammonia-nitrogen ratio of 5 to 1, blood plasma CO_2 is 24 in terms of mm. Hg,* and CO_2 in alveolar air 23 in terms of mm. Hg were observed. Gradually all signs of acidosis lessened, and on April 8, twenty-five days after admission, the diacetic acid reaction was negative and the CO_2 in the alveolar air was 33 mm. Hg. The carbohydrate tolerance and the blood sugar remained almost at the same level (See Table 2).

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*The blood sugar determination by Folin's method.

†The CO_2 in the alveolar air by Fridericia's apparatus.

*The plasma CO_2 was determined by Van Slyke's apparatus.

TABLE 1.—Third Admission. Carbohydrate and Protein Low; Fat High.

Date	Weight Kg.	Diet in Grams Carbo-hydrate	Protein	Fat	Calories	Urine (24 hours amounts) Vol. cc.	Acetone	Diacetic Acid	Nitrogen G	Ammonia Nitrogen G	Sugar G	Blood (Fasting) Sugar %	Non-Protein Nitrogen	Plasma CO2 mm. Hg.	Alveolar Air CO2 mm. Hg.	Remarks
Jan., 1921																*12 hours amount.
16	37.8	—	—	—	—	1570*		+			25					
17	37.6	10	58	46	686	3060	++	sl. +			25	0.26	30.0		39	
18	37.6	10	59	48	706	2450		+	12.8	0.98	20				37	
19	38.1	12	23	92	968	3000	++	+	10.8*	1.27	24				40	*Aliquot.
20	37.5	13	22	91	959	3240	++	0	10.8		32				40	
21	38.0		do			3100	++	sl. +	10.8	0.85	31					
22	37.4		do			3350		0	10.8		34				36	
23	38.1	13	23	91	963	2840		sl. +	10.8		14				44	
24	38.0		do			3300	++	+	8.9		20	0.28		37		
25	38.1		do			3500	++	sl. +	8.9		21					
26	38.0		do			2850	++	+	8.9		20					

TABLE 2.—Fourth Admission. Coma Averted.

Date	Weight Kg.	Diet in Grams Carbo-hydrate	Protein	Fat	Calories	Urine (24 hours amounts) Vol. cc.	Diacetic Acid	Nitrogen	Ammonia Nitrogen	Sugar	Blood (Fasting) Sugar %	Non-Protein Nitrogen	Fat %	Plasma CO2 mm. Hg.	Alveolar Air CO2 mm. Hg.	Remarks
Mar., 1922																
15	36.6	—	—	—	—	1320*	++++	7.0	1.4	34	0.29	34.2	1.22	24	23	*12 hours amount.
21	—	21	53	0	296	2500	++	16.0	1.7	55	0.27	—	1.24	—	31	Generalized edema.
28	40.7	21	81	30	678	3200	++	17.5‡	1.7	73	0.31	33.6	0.95	—	30	Generalized edema.
April																
4	37.7	20	71	42	742	3000	+	13.9‡	—	60	0.35	33.6	0.99	40	—	‡These figures were obtained from aliquot specimen of urine for several days.
11	36.6	18	57	31	579	3500	0	12.6‡	—	49	0.29	41.4	1.06	44	—	
18	36.8	8	33	19	335	3000	0	13.3‡	—	39	0.31	30.0	1.03	—	—	

TABLE 3.—Details of Divided Meal Schedule.

Date	Diet in Grams	First Extra 5.30 A.M.	Breakfast 8.00	Second Extra 10.30	Lunch 1.00	Third Extra 3.30	Supper 6.00	Fourth Extra 8.00
Oct. 25 to Oct. 31	Carbohyr. 9 Protein 25 Fat 54 Calories 622	20% Cream 15 cc	Egg 1 20% Cream 15 Lettuce 30 Thrice washed vegetable 150	20% Cream 15	Bacon 20 20% Cream 45 5% Vegetable 60 Thrice Washed Vegetable 150	20% Cream 15	Egg 1 Bacon 10 20% Cream 30 5% Vegetable 60 Thrice Washed Vegetable 150	
Nov. 1 to Nov. 6	Carbohyr. 9 Protein 25 Fat 54 Calories 622	Lettuce 30	Egg 1 20% Cream 30 Lettuce 10	Lettuce 45	Bacon 20 20% Cream 60 Lettuce 10	Lettuce 45	Egg 1 Bacon 10 Lettuce 10 20% Cream 45	
Nov. 19 to Nov. 24	Carbohyr. 8 Protein 22 Fat 51 Calories 579	Lettuce 25 40% Cream 10	Egg 1 Lettuce 10	Lettuce 50 40% Cream 10	Bacon 20 40% Cream 20 Lettuce 10 Cucumber 30	Lettuce 50 40% Cream 10	Egg 1 Bacon 10 40% Cream 10 Lettuce 10 Cucumber 30	Lettuce 35 40% Cream 10
Nov. 25 to Nov. 28	Carbohyr. 11 Protein 24 Fat 63 Calories 707	Lettuce 60 40% Cream 15	Egg 1 40% Cream 15 Lettuce 20	Lettuce 60 40% Cream 15	Bacon 20 40% Cream 15 Lettuce 20 Cucumber 30	Lettuce 60 40% Cream 15	Egg 1 Bacon 10 40% Cream 15 Lettuce 20 Cucumber 30	Lettuce 60
Dec. 13 to Dec. 18 (Discharge)	Carbohyr. 15 Protein 27 Fat 75 Calories 843	Lettuce 50 40% Cream 15	Bacon 10 40% Cream 15 Spinach 30	Lettuce 60 40% Cream 15	Egg 1 Bacon 10 40% Cream 15 Lettuce 50 Asparagus 30	Lettuce 60 40% Cream 20 Cucumber 30	Egg 1 Bacon 10 40% Cream 20 Lettuce 20 Cucumber 30 Spinach 30	Lettuce 60 40% Cream 20

TABLE 4.

		Diet in Grams				Urine						Blood (Fasting)					
Date Oct., 1921	Weight Kg.	Carbo-hydrate	Protein	Fat	Calories	Vol. cc. 16 hrs. amts.	Acetone	Diacetic Acid	Nitrogen G	Ammonia Nitrogen G	Sugar G	Sugar %	Non-Protein Nitrogen mg/100 cc.	Fat %	Plasma CO2 mm. Hg.	Alveolar Air CO2 mm. Hg.	Remarks
6	—	—	—	—	—	1400		+++	6.7	1.2	35					28	Plasma creamy
7	31.7	36	62	21	593	2300		+++		1.9	55	0.36	30.6	2.4	28		(Plasma fat 4.4)
8	32.1	30	59	33	653	2750		+++			55					29	
9	33.2	28	54	31	607	2550		+++		2.4						29	
10	34.0	24	42	41	633	3300		++		1.7	43					30	
11	34.5	23	41	40	616	3300		+		1.2	66					32	
12	35.0		do			2000+		+		1.6+	46+						
13	34.5	24	34	41	601	2950		+			47						
14	34.9	do		39	583	3400		sl. +			68	0.33		2.30			
15	35.3		do			2900		sl. +			46						•Aliquot
16	35.9		do			2800		+	7.8•		48						
17	36.4		do			2400		sl. +	7.3	1.0	46					35	
18	37.3	18	27	51	639	2300		sl. +	7.8		54						
19	37.7		do			2700		sl. +	7.8		40						
20	38.0		do			3000		sl. +			40						
21	38.0		do			2200		0			29					36	
22	38.2		do			2900		0			49	0.32	29.4	1.44			
23	37.7		do			2900		sl. +		0.9	44						
24	38.2		Fasting			2700		0			18						
25	37.2	9	25	54	622	2800		0	5.2•		25					36	Six meals began
26	38.4		do			2100		0	5.2		21						•Aliquot
27	38.4		do			2200		0	5.2		15						
28	38.4		do			2800		0			36	0.33		1.26			
29	38.0		do			2800		0			28						
30	38.3		do			2300		0	5.2		32						
31	38.5		do			2400			8.64	1.12	34						
							Acetone & Diacetic Acid (as Acetone)	B-Oxybutyric Acid									
Nov. 1	38.5		do			2530	2.274	2.777	7.14	0.76	26						During this period broth, bran biscuits, jellies or thrice-washed vegetables were excluded
2	38.5		do			3040	5.250	5.250	7.48	0.77	19	0.32	28.8		48		
3	37.3		do			3230	1.150	5.662	7.95	0.77	16						
4	36.6		do			2650	2.396	3.064	6.36	0.67	15						
5	35.8		do			3300	5.478	2.631	8.51	0.89	14						
6	35.2		do			3200					13						
7	34.6	1	7	12	140	2500					10	0.32	28.8	1.43			
							Acetone	Diacetic Acid									
8	34.4		Fasting			2000		0			8						
9	34.2		Fasting			2900		0			9						
10	34.2	2	12	21	245	2500		0			5						
11	33.6		do			3100		0			6						

	12	33.8		do			3200		0			trace				
	13	33.8		do			4000		0			trace				
	14	33.7		do			2425		0			2	0.29	30.0		
	15	34.4	2	18	27	323	3260		0			3				
	16	34.0		do			3800	+	0			11				
	17	33.8		do			3200		0		0.75	3				
	18	33.8		do			3600		0			4				
	19	33.2	8	22	51	579	5400		0			5				
	20	32.7		do			3900		0			4				
	21	32.8		do			4000		0		1.0	4	0.31			
	22	33.2		do			2500+	+	0		0.7	3+				
	23	32.9		do			3100		0	5.58		3				
	24	32.7	10	23	57	655	4200		0			trace				
	25	32.6	11	24	63	707	3400		0	5.8		trace				
	26	31.8		do			3360		0	5.44		0				
	27	31.2		do			3520	+	0	6.34	0.93	0				
	28	31.9		do			3020			5.6		0	0.23	30.0		
								Acetone & Diacetic Acid (as Acetone)	B-Oxybutyric Acid							
	29	32.1	12	25	63	715	3320	0.750	0.903	4.8	0.57	0				
	30	32.2	13	25	63	719	3800	1.277	1.966	5.16	0.91	0				
Dec.	1	31.9	14	26	75	835	4000	1.216	0.972	5.40	0.82	trace				
	2	31.8		do			4350	—	—	5.61	0.68	0				
	3	31.7	15	27	75	843	3350	0.286	0.902	5.03	0.54	trace				
	4	31.9		do			3970	0.492	0.168	5.71	0.55	0				
	5	31.9		do			3550	0.128	0.469	5.33	0.45	trace	0.27	24.0		
	6	31.5		do			3980	0.494	0.652	5.13	0.43	6.8				
	7	31.8		do			3160	0.468	0.884	4.65	0.36	3.2				
	8	31.9		do			3820	0.275	0.585	4.58	0.30	7.6				
	9	31.9		do			4000	0.688	0.190	4.56	0.48	5.2				
	10	32.1		do			3780	0.422	0.499	4.53	0.39	3.7				
	11	31.9		do			3910	0.125	0.413	4.74	0.47	6.7				
	12	31.5	5	11	27	307	3550	0.142	—	4.00	0.37	0	0.27	24.0	1.20	
	13	31.5	15	27	75	843	4300	0.138	0	5.03	0.34	0				
									Total Acetone Bodies							
	14	31.7		do			4100+		0.590+	3.99+	0.39	0				
	15	31.7		do			4600		1.441	4.14	0.44	trace				
	16	31.5		do			4340		0.150	6.90	0.70	6				Shopping and tired
	17	31.8		do			4310		0.556	6.72	0.75	trace	0.27	18.0	1.27	
Jan., 1922									Diacetic Acid							
	11			do			Single Specimen		sl. +			0.3%.	0.22		0.74	Discharge

TABLE 5.

Date	Admission	Weight Kg.	Diets in Grams Carbohydr.	Protein	Fat	Calories	Total Nitrogen	Sugar	Diacetic Acid	Glucose entered the metabolism from exogenous and endogenous sources	Glucose Utilized	Blood Sugar %	Remarks
June 25, 1919	First	46.0	22	69	48	816	—*	0	0	71	71	0.135	
January 11, 1920	Second	37.9	4	82	56	848	—*	0	0	58	58	0.176	
January 19-26, 1921	Third	37.9	13	23	91	963	10.1	35	+	59	24	0.28	
March 27-30, 1921	Fourth	36.6	21	76	36	710	17.5	75	+	91	16	0.31	
October 16-19, 1921	Fifth	31.8	21	31	45	611	7.8	47	+	59	12	0.33	
October 25-28, 1921		Wgt. on admission (31.8) is used for calculation.	9	25	54	622	5.2	24	0	38	14	0.33	Multiple Meals
Nov. 1-5, 1921			9	25	54	622	7.5	18	0	35	17	0.32	
Nov. 9, 1921			Fasting				6.3	9	0	33	24		
Nov. 25-28, 1921			11	24	63	707	5.8	0	0	41	41	0.23	
Nov. 29-Dec. 2, 1921			13	25	69	778	5.2	0	0	42	42		
December 3-6, 1921			15	27	75	843	5.3	25	0	44	41	0.27	

NOTE: The amounts of glucose which entered the metabolism from exogenous and endogenous sources is calculated on the supposition that the patient needed 25 calories per kilogram of body weight per day.

*The nitrogen in the urine was not determined and the nitrogen equilibrium is assumed.

Subsequent History.—On July 6, 1921, the glycosuria amounted to 2.5 per cent., and there was a marked ketonuria. On September 23, the same findings were recorded on a diet of carbohydrate 10 grams, protein 50 grams, fat 60 grams, and calories 804. The blood sugar on this day was 0.33 per cent.

From the foregoing statement the following facts will be noticed: A constant and abnormally high blood sugar, a negative nitrogen balance, persistent glycosuria May, 1920, to October 6, 1921, and the frequent presence of acidosis. For these reasons the patient was readmitted October 6, 1921.

Fifth Period at New England Deaconess Hospital (October 6, 1921, to December 18, 1921).

The severe acidosis which existed on admission decreased markedly in the first two weeks at the hospital. The lack of improvement in the tolerance for carbohydrate forced us to try the effect of "six meals" with this patient, a plan which had been studied in a preliminary way with other cases of Dr. Joslin by Dr. Horace Gray. Therefore, after a fast of one day, the patient was placed upon a diet on October 24, 1921, which was arranged as shown in Table 3.

The results of this plan of treatment are shown in Table 4. It will be seen that a slight decrease in the elimination of glucose was obtained by this method, and after a subsequent fast of two days, the addition of food to the reduced diet caused a decreased elimination of glucose, which may be explained by a decreased katabolism of the tissue protein as shown by the amount of nitrogen excreted. Thus, on November 26, was finally achieved cessation of the glycosuria which had persisted since May, 1920, namely, nineteen months. On the twenty-eighth of the same month, the blood sugar was estimated at 0.23 per cent., which was the smallest figure obtained since January, 1920, *i.e.*, nearly a year. Nitrogen balance had also been approached, and at last on December 15, 1921, the urinary nitrogen was calculated as smaller than that contained in the food. The qualitative reaction for diacetic acid had been negative since October 27, 1921. The patient was discharged on December 18 with a diet of carbohydrate 15 grams, protein 27 grams, and fat 75 grams, and calories 843. The blood sugar was 0.27 per cent., body-weight 31.8 kilograms on discharge.

The improvement in assimilative power for carbohydrate is further brought about by applying Woodyatt's formula[8] to the diet employed at different periods. This is shown in Table 5.

From this it is evident that the patient utilized 71 grams of glucose on the first admission, 58 grams of glucose on the second admission, but only 24 grams on the third admission, thus showing a definite loss in the power of carbohydrate assimilation. On October 16, 1921, when she was admitted for the fifth time, she utilized only 12 grams glucose. However, after the "multiple meal" schedule had been introduced, the amounts of nitrogen, as well as sugar, eliminated, gradually decreased, and on the third of December, 1921, the tolerance rose to 41 grams of glucose. Comparing the two periods, January 19-26, 1921, and November 29 to December 2, 1921, it will be seen that the differences in the amounts of foodstuffs ingested in the two periods were these, namely, that 20 grams more fat were given and 185 more calories were produced at the former period, the amounts of carbohydrate and protein remaining almost the same. Nevertheless, the amount of nitrogen eliminated at the former period was twice as much as that of the latter and the quantity of glucose entering into metabolism decreased from 59 grams in the former to 42 grams in the latter period.

Subsequent History.—Since the patient left the hospital she followed her diet faithfully. On January 11, 1922, the urine showed 0.3 per cent. sugar and slight reaction for diacetic acid. The blood sugar was 0.22 per cent. and blood fat 0.74 per cent., a satisfactory contrast to 0.36 per cent. blood sugar and 2.4 per cent. blood fat on October 7.

The above experiments suggest that the gratifying result obtained is due to the six split meals, but it is possible that the lower carbohydrate fat ratio in the divided meal period may have also been a factor. Absolute proof would not be furnished unless the identical diet, both in variety and quantity, should be given the same patient as three meals under the same conditions for a definite time. The justification for this paper is rather the fact that such an intractable glycosuria, withstanding many efforts at desugarization, disappeared with the new divided diet.

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[6] Sakaguchi, K.: Mitt. Med. Fak. Univ. Tokyo, 1918, xx, 439.
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The Massachusetts Medical Society.

PROGRAM OF THE ONE HUNDRED AND FORTY-FIRST ANNIVERSARY.

The Exercises of the Anniversary will be held on Tuesday, June 13, and Wednesday, June 14, at the Harvard Medical School.

STANDING COMMITTEES.

OF ARRANGEMENTS

Donald Macomber K. G. Percy F. J. Callanan
Dwight O'Hara J. C. Rock L. S. McKittrick

ON PUBLICATIONS AND SCIENTIFIC PAPERS

E. W. Taylor R. B. Osgood F. T. Lord
R. M. Green A. C. Getchell

ON MEMBERSHIP AND FINANCE

S. B. Woodward A. Coolidge, Jr. Samuel Crowell
Gilman Osgood Homer Gage

ON ETHICS AND DISCIPLINE

Henry Jackson T. J. Robinson David Cheever
F. W. Anthony R. H. Seelye

ON MEDICAL EDUCATION AND MEDICAL DIPLOMAS

C. F. Painter J. F. Burnham A. G. Howard
R. L. De Normandie H. P. Stevens

ON STATE AND NATIONAL LEGISLATION

J. W. Bartol F. G. Wheatley E. H. Stevens
F. E. Jones J. S. Stone

ON PUBLIC HEALTH

E. H. Bigelow Annie L. Hamilton E. F. Cody
Victor Safford R. I. Lee

DELEGATES AND ALTERNATES TO THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION.

DELEGATES	ALTERNATES
F. B. Lund	W. H. Robey, Jr.
E. F. Cody	F. W. Anthony
H. G. Stetson	L. A. Jones
C. E. Mongan	Gilman Osgood
J. F. Burnham	A. R. Crandell

OFFICERS OF THE SOCIETY.

1921-1922

JOHN W. BARTOL, ... President
3 Chestnut Street, Boston 9.

BRACE W. PADDOCK, ... Vice-President
7 North Street, Pittsfield.

WALTER L. BURRAGE, ... Secretary
42 Eliot Street, Jamaica Plain, Boston 30.

ARTHUR K. STONE, ... Treasurer
Auburn Street, Framingham Center.

EDWIN H. BRIGHAM, Brookline, Librarian Emeritus
8 The Fenway, Boston 17

DONALD MACOMBER, { Chairman of Committee of Arrangements.
321 Dartmouth St., Boston 17.

SECRETARY'S NOTICE.

All communications as to membership, especially changes of residence and address, should be sent to the Secretary, who keeps a constantly corrected official list of the Fellows and their addresses. District Secretaries and Treasurers should true their lists by the monthly official lists of transfers and changes published in the *Journal.*

TREASURER'S NOTICE.

ASSESSMENTS SHOULD BE PAID TO DISTRICT TREASURERS BEFORE THE MEETING, OR, IN THE CASE OF NON-RESIDENTS, TO THE TREASURER.

ASSESSMENTS WERE DUE JANUARY 1ST, BUT FOR THE CONVENIENCE OF MEMBERS WHO HAVE BEEN UNABLE TO PAY, ASSESSMENTS WILL BE RECEIVED FOR THE TREASURER AT THE MEETING.

THE JOURNAL

The *Boston Medical and Surgical Journal,* the official organ of the Society, will be sent to Fellows who have paid their assessments, and to such Honorary and Retired Fellows as may apply for it.

GENERAL INFORMATION

A Bureau of Information will be maintained by the Committee of Arrangements during Tuesday and Wednesday in Building A (Administration Building) of the Harvard Medical School, 240 Longwood Avenue.

All Fellows are requested to register and procure their dinner tickets as early as possible at the Bureau of Information.

All General and Section Meetings will be held at the Harvard Medical School, with the exception of the Shattuck Lecture and the Annual Dinner, which will be held at the Boston Medical Library and the Copley-Plaza Hotel, respectively. Parking space for automobiles with supervision will be provided.

June 13, 1922

TUESDAY MORNING

From 8.30 to 9.45 o'clock

PROGRAM OF HOSPITAL CLINICS

Boston City Hospital.—There will be the usual ward rounds on the Medical Services and routine operations on the Surgical Services.

Massachusetts General Hospital.—There will be the usual ward rounds on the Medical Services and routine operations on the Surgical Services.

Peter Bent Brigham Hospital.—There will be the usual medical ward rounds and routine operations and a demonstration of interesting cases.

Carney Hospital.—The Surgical Service will be represented by Drs. Bottomley, Mahoney and Fraser, who will perform operations and show cases. Drs. Johnson and Phaneuf of the Gynecological Service will also operate and report cases. Drs. Fennessy and Denning of the Medical Department will show cases and emphasize particularly points of differential diagnosis and treatment.

Children's Hospital and Infants' Hospital.—There will be a demonstration at the Children's Hospital of interesting cases at hand in the two hospitals.

Psychopathic Hospital.—Cases of post encephalitis lethargica will be shown if such cases are available, and other interesting material.

Free Hospital for Women.—Routine operations will be held in the operating room beginning at 7.30. Dr. W. P. Graves will operate.

Boston Lying-In Hospital.—There will be ward rounds and demonstrations of interesting cases conducted by Dr. J. R. Torbert.

At 10 o'clock

MEETING OF THE SECTION IN SURGERY

Harvard Medical School, Building C, Amphitheatre.

Officers of the Section of Surgery

J. C. Hubbard, M.D., Boston, *Chairman.*
G. A. Leland, Jr., M.D., Boston, *Secretary.*

1. **"Malignancy in the War Veteran."**
   By William F. Cotting, M.D., Boston.
2. **"Tuberculosis of the Breast."**
   By Peirce Henry Leavitt, M.D., Brockton.
   Discussion opened by F. B. Mallory, M.D., Brookline, and R. B. Greenough, M.D., Boston.
3. **"Etiology of Sterile Marriages from an Analysis of 500 Case Records."**
   By Donald Macomber, M.D., West Newton.
   Discussion opened by Edward Reynolds, M.D., Boston.
4. **"Fractures of the Lower End of the Radius Associated with Fractures or Dislocations of the Lower End of the Ulna."**
   By John Homans, M.D., Brookline.
   Discussion opened by F. J. Cotton, M.D., Boston.
5. **"Heritage and the Reckoning of a Surgeon."**
   By Michael F. Fallon, M.D., Worcester.
   Discussion opened by W. P. Bowers, M.D., Clinton, and J. T. Bottomley, M.D., Boston.
6. **"The Treatment of Tonsils by Radiation from Radium Salts instead of by Operation."**
   By Francis H. Williams, M.D., Boston.
   Discussion by G. W. Gay, M.D., Boston.

At 10 o'clock

MEETING OF THE SECTION OF PEDIATRICS

Harvard Medical School, Building B, Amphitheatre.

Officers of the Section of Pediatrics

Maynard Ladd, M.D., Boston, *Chairman.*
J. Herbert Young, M.D., Newton, *Secretary.*

1. **"A Consideration of the Water Balance in Infants."**
   By Oscar M. Schloss, M.D., Professor of Pediatrics, Harvard Medical School, Boston.
   Discussion opened by T. M. Carpenter, Ph.D., Nutrition Laboratory of the Carnegie Institute, Boston.
2. **"Child Hygiene: The Pediatrists' Opportunity."**
   By Eugene R. Kelley, M.D., Massachusetts Commissioner of Public Health, Boston.
   Discussion opened by M. E. Champion, M.D., Boston.
3. **"Tonsillectomy in the Contagious Diseases."**
   By Edwin H. Place, M.D., Assistant Professor of Pediatrics, Harvard Medical School, Boston.
   Discussion opened by C. R. C. Borden, M.D., Brookline.

At 11.30 o'clock

ANNUAL MEETING OF THE SUPERVISORS

Harvard Medical School, Building A, Amphitheatre.

TUESDAY NOON

ANNUAL MEETING OF THE COUNCIL

Harvard Medical School, Building A, Amphitheatre.

From 1.30 to 2.30 o'clock

LUNCH WILL BE SERVED

to members on the Terrace on the payment of a small charge.

TUESDAY AFTERNOON

At 2.30 o'clock

MEETING OF THE SECTION OF MEDICINE

Harvard Medical School, Building C, Amphitheatre.

Officers of the Section of Medicine

Herman T. Baldwin, M.D., Chestnut Hill, *Chairman.*
Francis M. Rackemann, M.D., Boston, *Secretary.*

1. **"Focal Infections in Pregnancy."**
   By John E. Talbot, M.D., Worcester.
   Discussed by S. B. Wolbach, M.D., James R. Torbert, M.D., and Frederick C. Irving, M.D., all of Boston.

2. **"Epilepsy."**
   By Douglas A. Thom, M.D., Belmont.
   Discussed by Stanley Cobb, M.D., Boston.
3. **"The Physician and the Laboratory."**
   By Francis W. Peabody, M.D., Boston.
   Discussed by George R. Minot, M.D., Boston.
4. **"Lead Poisoning."**
   By Wade S. Wright, M.D., Newton Center.
   Discussed by Joseph C. Aub, M.D., and John A. Key, M.D., Boston.
5. **"Treatment of Rheumatic Fever."**
   By Homer F. Swift, M.D., New York City.
   Discussion by R. I. Lee, M.D., Cambridge.

At 2.30 o'clock

MEETING OF THE SECTION OF TUBERCULOSIS

Harvard Medical School, Building B, Amphitheatre.

Officers of the Section of Tuberculosis

Edward O. Otis, M.D., Boston, *Chairman.*
Sumner H. Remich, M.D., Reading, *Secretary.*

"Tuberculosis in Children"

- **(a) From the Standpoint of the Pediatrist.**
  By Professor (Emeritus) John Lovett Morse, M.D., Harvard Medical School.
- **(b) From the Standpoint of the Orthopedist.**
  By Joel E. Goldthwait, M.D., Boston, Brigadier-General M. R. C., U. S. A.
- **(c) From the Standpoint of the Internist.**
  By Henry D. Chadwick, M.D., Superintendent of the Westfield State Sanatorium (illustrated with lantern slides).
- **(d) From the Standpoint of the Surgeon.**
  By Lloyd T. Brown, M.D., Assistant Visiting Orthopedic Surgeon, Massachusetts General Hospital, Boston.

"The X-Ray in the Diagnosis of Pulmonary Tuberculosis."
By Samuel W. Ellsworth, M.D., Physician for X-Ray Service, Boston City Hospital (illustrated with lantern slides).

At 2.30 o'clock

MEETING OF THE SECTION OF HOSPITAL ADMINISTRATION

Harvard Medical School, Building E, Amphitheatre.

Officers of the Section of Hospital Administration

J. B. Howland, M.D., Boston, *Chairman.*
N. W. Faxon, M.D., Boston, *Secretary.*

1. **"The Use of Pathological Material in Small Hospitals."**
   By John F. Kenney, M.D., Pawtucket, R. I.
2. **"What Medical Statistics shall be Published in the Hospital Annual Report?"**
   By David Cheever, M.D., Boston.
3. **"The Place of the Full Time and Part Time Physician in the Modern Hospital."**
   By Roger I. Lee, M.D., Cambridge.

TUESDAY EVENING

At 8 o'clock

THE SHATTUCK LECTURE

Boston Medical Library, John Ware Hall.

"The Treatment of Diabetes Mellitus."
By Elliott P. Joslin, M.D., Boston.

After the lecture light refreshments will be served in the Supper Room.

June 14, 1922

WEDNESDAY MORNING

From 9.30 to 10.30 o'clock

ONE HUNDRED AND FORTY-FIRST ANNIVERSARY

Harvard Medical School, Building C, Amphitheatre.

DEPARTMENT OF PHYSIOLOGY

Demonstrations and Papers, under the supervision of Alfred C. Redfield, M.D.

1. **"The Experimental Production of Traumatic Shock."**
   By Mr. F. R. Griffith.
2. **"The Growth of School Children."**
   By W. T. Porter, M.D.
3. **"The Distribution of Lead in Acute and Chronic Lead Poisoning."**
   By Miss Anne Minot.
4. **"The Pulmonary Arterial Pressure."**
   By C. K. Drinker, M.D.

From 10.30 to 11.30 o'clock

Harvard Medical School, Building E, Amphitheatre.

DEPARTMENT OF PHARMACOLOGY

Demonstrations by Reid Hunt, M.D.

1. **"The Newer Drugs of Greatest Value to the Practitioner."**
2. **"Latest Advances in Local Anaesthesia."**
3. **"New Therapeutic Agents and Their Value."**
4. **"Experimental Demonstration of Salvarsan."**

At 11.30 o'clock

BUSINESS OF THE ANNUAL MEETING

Harvard Medical School, Building C, Amphitheatre.
Including:

1. The following amendment to the By-Laws, as approved by the Council, February 2, 1921, and referred to this meeting by the Society, June 1, 1921:

That Chapter IV, Section 3, of the By-Laws be so amended that the last sentence of paragraph one shall read: "Councilors only shall be eligible to the offices above named," viz., president, vice-president, secretary, treasurer and librarian, thus conforming the By-Laws to the Statutes, 1803, Chapter 85, Section 3, Digest, Article V, paragraph 3, which provides that the Councilors shall "appoint, from among themselves, a president, and such other officers of the said corporation as are to be so appointed."

2. Concerning a petition to the Legislature for an amendment to Chapter 15, Section 9, of the Statutes of 1781 (Article X of the Digest), increasing the amount of annual income from real and personal estate that may be received by the Society.

WEDNESDAY NOON

THE ANNUAL DISCOURSE

Harvard Medical School, Building C, Amphitheatre.

"The International Mind in Medicine."
By Kendall Emerson, M.D., Worcester.

From 1 to 2 o'clock

LUNCH WILL BE SERVED

to members on the Terrace on the payment of a small charge.

WEDNESDAY AFTERNOON

From 2 to 3 o'clock

Harvard Medical School, Building C, Amphitheatre.

DEPARTMENT OF CHEMISTRY

"Modern Blood Analysis."

By Otto Folin, M.D., and Helding Berglund, M.D.

From 3 to 4 o'clock

Harvard Medical School, Building E, Amphitheatre.

DEPARTMENT OF HYGIENE

Demonstrations under the supervision of M. J. Rosenau, M.D.

1. **"The Schick Test."**
2. **"The Wassermann Reaction."**
3. **"A Discussion on Botulism and Food Poisoning."**
4. **"Vaccines and Other Experimental Work on Pneumonia and Influenza."**

WEDNESDAY EVENING

At 7 o'clock

THE ANNUAL DINNER

The Annual Dinner will be served in the Ballroom at the Copley-Plaza Hotel. Informal dress. The tickets will be $1.00 and may be bought either at the Bureau of Information at the Harvard Medical School, Building A, during Tuesday and Wednesday, or at the Hotel, where they will be on sale from 6 to 7 P. M.

Fellows desiring to sit together in groups will please send their names to the chairman of the Committee of Arrangements, and the proper reservations will be made.

It is necessary that the chairman of the Committee know beforehand the approximate number of those who will attend the dinner, and for that purpose a reply postal card has been sent with the official program. It is earnestly requested that each Fellow fill out the card and mail it as soon as possible.

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Book Reviews.

Ephraim McDowell, "Father of Ovariotomy" and Founder of Abdominal Surgery; with an Appendix on *Jane Todd Crawford.* By AUGUST SCHACHNER, M.D., F.A.C.S., Louisville, Kentucky. Philadelphia and London: J. P. Lippincott Company. 1921.

"The motive for undertaking this work, the aims involved therein, and the results, which I hope have, at least in part, been accomplished, are set forth in detail in the foreword.

"Much as I have endeavored to avoid it, a certain degree of repetition was inevitable, and for this I offer the reader my apology.

"Although I have faithfully labored to present the facts, I do not flatter myself that the following pages are entirely free from error, and therefore beg the indulgence of the reader for any errors or omissions that may have crept in.

"I have made free use of N. S. Shaler's work, 'A Pioneer Commonwealth,' in the historical sketch of Virginia and Kentucky, as well as of the brochure of Dr. Eugene R. Corson on 'John Bell—Surgeon,' in my sketch of John Bell.

"Extracts from the writings of others have been added, not alone as proper correlatives to the biographies of Ephraim McDowell and Jane Todd Crawford, but also for the convenience of future students of the lives of these benefactors of the human race.

"While I have endeavored to give credit to those authors from whose contributions extracts have been made, I also confess my indebtedness to those authors from whose contributions extracts were not made, but whose writings have influenced and aided me in this undertaking.

"Dr. McDowell placed in the diadem of the art and science of surgery its most brilliant gem and in the eons of time becomes the indirect emancipator of countless millions of human beings from protracted suffering and premature deaths."

The foregoing has been taken, in part, from the preface, in part from the text of the volume under consideration. It is obvious that the writer is an enthusiast. On the whole, this is a desirable quality in a biographer. The book is very interesting, and well worth careful reading. Pictures, paper, letterpress and binding are also worthy of much praise. It is cordially recommended to every American and British physician and surgeon, and in particular to those (fortunately a rapidly increasing number) who are interested in the honorable past, and in the important individuals of Medicine, with a big "M."

The Etiology and Pathology of Typhus—Being the Main Report of the Typhus Research Commission of the League of Red Cross Societies to Poland. By S. BURT WOLBACH, JOHN L. TODD and FRANCIS W. PALFREY. Harvard University Press, Cambridge, Mass. 1922.

The work of Dr. Wolbach and his associates was well planned and well executed.

The observations confirm and amplify the findings of Fraenkel, who first pointed out the characteristic vascular lesions of typhus. Very strong evidence is adduced indicating that Rickettsia prowazeki is the cause of typhus fever. The virus of typhus fever in the louse was not separable from Rickettsia prowazeki, but a certain proportion of lice fed on typhus patients did not show the presence of this organism. A similar proportion of lice failed to transmit the disease. Rickettsia prowazeki in the louse was found to be intracellular. An extracellular form of Rickettsia was found in some of the Polish lice.

Incidentally, facts were observed tending to show that the extracellular organisms were Rickettsia pediculi and the cause of trench fever.

The clinical observations of Palfrey are of special value because he had exceptional opportunities for careful study from selected material.

Not the least important data are the observations on the pathology of typhus in the guinea pig.

The contributors and members of the commission merit congratulation not only for their important contributions to the knowledge of typhus fever but also for the excellent presentation of the data.

Foods of the Foreign-Born in Relation to Health. By **Bertha M. Wood**, Dietitian, Food Clinic, Boston Dispensary. With a Foreword by **Michael M. Davis, Jr.** Pages 98. Boston: Whitcomb & Barrows. 1922.

This small book by the dietitian of the Food Clinic at the Boston Dispensary is written for the purpose of comparing "the foods of other peoples with that of the Americans in relation to health."

Michael M. Davis, Jr., in his foreword remarks that "to know the characteristic foods of the foreign-born, the food flavors, the food habits of each of the chief races of immigrants found in this country, is an essential part of the knowledge which should be possessed by the physician, the public health nurse, the social worker, and the dietitian who deal with these newcomers in America."

In her discussion of "Dietary Backgrounds," Miss Wood well summarizes the dietary situation from the point of view of the new arrival in this country in the following paragraphs:

"It is much easier for the dietitian to learn the foods of the foreign-born than for these people to adjust their finances to a new dietary. They are willing to learn, but who will teach them? Who knows their food? How many and which ones shall they continue to use to meet their daily needs and their new financial responsibilities? Where shall they buy them? Even the dishes to cook in are of a different type. Which kind produces the familiar results? Their housing conditions are changed; their style of clothing must be changed; many of their social customs as well as their religious ideals must be given up; the only habit and custom which can be preserved in its entirety is their diet. This is made possible because they find in America, as in no other country, all their native raw food materials.

"There is much that we may learn from these people, and equally much for them to learn from us with profit. If we then study their customs and acquaint ourselves more and more with their foods, we shall not only broaden our own diet by the introduction of new and interesting dishes but also we shall be better able to help these foreign born to adjust themselves to new conditions with as few changes as possible.

"A dietitian has never been so honored, in college or out, as she will be by these foreign-born people when once she talks to them of their familiar foods. An Armenian storekeeper found a fellow-countryman, a chef in an Armenian restaurant, who was suffering from indigestion. He said to him, 'You come with me. I take you to the smartest woman you ever knew. She knows our foods; she tell you what to eat; you feel better.'

"To meet the foreign-born taste, the principal requirement is to give the flavor; any nurse or dietitian can measure the amount in calories or grams when she once knows the materials and how to combine them."

Miss Wood has considered the foods of the Mexicans, Portuguese, Italians, Hungarians, Poles and other Slavic peoples, the peoples of the Near East, and the Jews. The only regret is that her review has not also included the foods of the French, the Germans and the Scandinavians. It is to be hoped that these may be included in the next edition of this little book.

The book itself should interest those discriminating persons who enjoy worth-while additions to their own dietaries. It cannot fail to stimulate all health workers to consider the dietary problems of the foreign-born from a new and wholly rational point of view—that of the psychological reactions of peoples to involuntary changes in their national food habits.

Principles of Medical Treatment. Fifth Revised Edition. By **George Cheever Shattuck**, M.D., A.M., with contributions by other writers. Case History Series. Boston: W. M. Leonard. 1921.

In these days of multivolume systems of treatment, filled with theory and speculation, it is refreshing to come upon a small volume containing the results of practical clinical experience. In the "Principles of Medical Treatment" these are given in sufficient detail to insure utility, and with sufficient brevity to avoid obscurity. The principles given represent the personal experience of the writers, and are therefore free from inherited fallacies that often persist through generations of "systems."

The arrangement of the text is excellent. Of particular value are the sections on diagnosis.

Successful treatment demands correct diagnosis, and the majority of incorrect diagnoses are more often due to the physician's failure to appreciate the possibilities in the case than to lack of technical aids. The list of conditions to be excluded which appears almost at the beginning of each article is therefore exceedingly valuable (*vide* Acute Indigestion).

The chapters on medication begin with a foreword which every medical student should be obliged to learn by heart, and which all practitioners should read frequently. The chapters which follow are well arranged, and the list of drugs and non-medicinal preparations is well selected.

This book belongs in that group of small, easily readable volumes which can be easily referred to, and in which there is to be found a surprisingly large number of facts. It should, therefore, be found in every physician's library.

Psychoanalysis: Its Theories and Practical Application. By A. A. BRILL, M.D. Third Edition. PP. 468. Philadelphia and London: W. B. Saunders Co. 1922.

After the initial antagonisms toward psychoanalysis in America, antagonisms partly based on ignorance of its theories and practice and partly because its fundamental truths produced emotional discomforts in those who had not solved their own inner conflicts, the subject entered upon a new phase of widespread interest. This popular interest has produced what Freud a few years ago termed "wild psychoanalysis" and against which he issued a warning, for most of this popular interest is not psychoanalysis at all, but rather a caricature and a distortion of the subject. Consequently and unfortunately we are in the midst of a veritable mental epidemic which has interpenetrated in every direction.

Certain individuals without adequate training in neurology or psychiatry are practising what they term "psychoanalysis" or a "modification" of it; literary critics are using psychoanalytic terms in their writings, in most cases incorrectly; novelists are having their heroes and heroines psychoanalyzed in a manner to which no analyst would subscribe; we are even told how to psychoanalyze ourselves, a procedure as manifestly impossible as to perform a major surgical operation on ourselves; and finally there has appeared a veritable flood of magazine articles and books, which distort the entire subject or inaccurately reproduce the work of the American pioneers of the subject. In the course of events, this superficial flood can never overwhelm psychoanalysis as practised and developed by those who have had a fundamental training, any more than the advertising of certain "female regulators" can injure gynecology or the "cancer cures" harm the work of the well-trained surgeon.

In the last few years, out of this heterogeneous mass, there have been published in America a few sound volumes on psychoanalysis written by physicians who have had the necessary experience for its understanding and practice. In the successful application of the psychoneuroses precipitated by the war, psychoanalysis has gained many new adherents among the medical profession.

Among the books written by physicians on psychoanalysis, this volume by Dr. Brill, which has now reached its third edition, must be accorded a prominent place. It is the result of long experience with the science of psychoanalysis and is eminently practical in its tendencies, as it is concerned so largely with the clinical applications of the subject. It provides a safe and sound guide for the physician, as its subject matter leads naturally from the more simple manifestations in the psychopathology of everyday life to the more complex problems of homosexuality, the neuroses and various mental diseases, such as paranois and the paraphrenias. For a clear and sound presentation of the subject of psychoanalysis, both from the clinical and theoretical standpoints, this volume can be highly recommended, and its third revised edition attests to both its soundness and popularity.

The Habit of Health. By OLIVER HUCKEL. PP. 128. New York: Thomas Y. Crowell Co. 1922.

This small volume appears to be a reprint and condensation of a larger book issued in 1909 under the title of "Mental Medicine." It embodies the usual kind of advice given before the limitations of suggestion and autosuggestion became known through the development of the analytical methods.

The Surgery of the Peripheral Nerve Injuries of Warfare. By HARRY PLATT, M.S. Lond., F.R.C.S. Eng. Edited by WILLIAM WOOD & Co. New York: John Wright & Sons, Ltd. Bristol: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. London. 1921.

The book opens with a discussion of nerve regeneration, nerve topography, blood supply, etc. The author confirms the theory of regeneration only from the central portion and the necessity of a preëxisting neurilemmal framework for down growth of the axis cylinders. "The lesson of topography in relation to nerve suture is the simple avoidance of torsion of either proximal or distal stumps" (page 8). Nerve anastomosis is discussed but declared impractical.

A section on pathological changes, due to gunshot injuries, and clinical methods of investigation in general, is followed by a discussion of clinical syndromes. Four clinical syndromes are outlined:

1. Complete interruption.
2. Incomplete interruption, which is a syndrome presenting wide variations. One important form is spoken of as the "distal syndrome." In this form we find activity in the proximal muscles supplied by the injured nerve, but loss of function of the distal muscles and complete sensory paralysis. This, the author asserts, is very common in the nerve spindle and is due to the fact that a few motor fibres only can get by the block, and these are utilized in the proximal muscles, and also to the feeble control exerted by the spinal centers over the regenerative processes in the extreme distal part of the limb.
3. The syndrome of irritation with hyperæsthesia, pain and trophic changes, with resulting degeneration in the muscle and joint capsule.
4. The syndrome of recovery.

Part II is devoted to the general indications for nerve exploration, technique, and a tabulation of results obtained. The author states that exploration is in order under the following conditions:

"Where the syndrome of complete interruption has persisted unchanged after a period of observation during which repeated clinical examinations have been carried out. In the choice of the limits of this period of delay we are influenced by the known time after the injury or suture at which the signs of recovery should be expected. The early sensory changes—recession of the area of protopathic loss, or the clinical evidence of the neurotization of muscles supplied by the proximal branches, are seen at the earliest at or about the fourth month. As a working plan a period of observation lasting six months is reasonable, although it must be admitted it is essentially an arbitrary one. Recognizing that the anatomical limits of the lesion are sometimes definable in a given case before operative exploration, this full period of delay is often unnecessary, and, indeed, inadvisable, providing that the condition of the limb is such as to render any operation feasible.

1. With regard to the stage of safety after complete healing of the wound, a period of four to six weeks should be taken as a minimum; but this may be prolonged according to the influence of local conditions. In a considerable number of cases the attainment of sound healing and the preliminary nutritive treatment occupy the full six months period of probation.
2. Where the syndrome of incomplete interruption has continued without change for six months, and particularly when this is represented by the distal syndrome.
3. In the presence of the syndrome of irritation, either of a moderate degree showing no signs of subsidence, or in the severe type, causalgia, at the earliest possible moment (page 22).

The necessity for direct electrical stimulation at time of operation is emphasized—methods of repair, resection, neurolysis, etc., are discussed. Resection and suture, simple neurolysis and capsulectomy neurolysis (which consists in removing the layers of thickened perineurium from a spindle) are the only methods of treatment of the injured nerve which are advocated. The nerve graft is to be attempted only if all methods to bring about a direct suture fail. The chance of useful regeneration following grafting is very slight, though it must be admitted that the conduction of impulses can be established through such grafts. The number of motor and sensory fibers provided for in the graft is apparently too few for useful function. The flap operation, nerve anastomosis and tubulization are only mentioned as procedures of no value in surgery. Endoneurolysis, as advocated by Stoffel, and also the making of long slits in the scarred nerve (hersage) are condemned. The importance of direct suture and its difficulties are outlined, as are also the various methods of obviating nerve defects, such as transplantation, stretching and bone shortening.

The last portion of the book is given over to tables of the author's results, with discussion of each, and finally some suggestions as to the advisability of operation at the present time in nerve injuries due to wounds received during the World War.

The book is a short one, comprising as it does two Hunterian Lectures delivered by the author in 1921. It is concise, clean-cut and readable. Though one may not agree with every detail of it, it is a valuable guide to those interested in peripheral nerve surgery, whether due to war injuries or not.

An Essay on the Physiology of the Mind. By FRANCIS X. DERCUM, M.D. PP. 150. Philadelphia and London: W. B. Saunders Co. 1922.

This small volume is an attempt to present the basic facts of those reactions of the organism to environment which under given conditions manifest themselves in the qualities known as "mind." The subject is discussed from the purely materialistic standpoint and the data of comparative neurology, and the interpretation, therefore, is based upon biological, morphological, physical and chemical considerations. In contradistinction to the modern dynamic approach to the subject, the essay is concerned with purely static considerations. According to the author, all the phenomena of consciousness in both its normal and abnormal aspects, such as hysteria and its protean manifestations, certain mental diseases, sleep and hypnosis, can be satisfactorily explained on the basis of the ameboid movements of the cortical neurones, a theory which is as fantastic as it is improbable, as this ameboidism of the neurones, even according to the references furnished by the author of this book, is not accepted by such a neuro-histologist as Ramon y Cajal or such a physiologist as Sherrington.

In his discussion of hysteria, for instance, he utilizes those older theories which fit into his preconceived ideas. For him hysteria is "a neuropathy of degeneracy," "its symptoms are always suggestive of a biological inferiority," while hysterical paralyses are produced by a retraction of the processes of the neurones in the particular part of the motor area of the cortex corresponding to the portion of the body involved. How strange all this sounds in the twentieth century! Any attempt to explain the nature of mind merely on the architecture of the nervous system is about as successful as an attempt to explain the nature of electricity on the basis of switchboards and insulated wires.

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SEMINAL VESICULITIS; SYMPTOMS, DIFFERENTIAL DIAGNOSIS, TREATMENT AND BACTERIOLOGICAL STUDIES IN ONE THOUSAND CASES.

White, Edward William, and Gradwohl, R. B. H. (*Journal of Urology*, Oct., 1921), say: The symptomatology of seminal vesiculitis naturally divides itself into neurotic, bladder and urinary, perineal and testicular, abdominal, sexual and rheumatic symptoms. This varied and extensive symptomatology is due in all probability to the anatomical proximity of the vesicles to the bladder, ureters, and prostate. Neurotic symptoms are present in 90 per cent. of the cases. Testicular and perineal symptoms were prominent in all cases. In all cases of long duration a trigone cystitis of varying degree was noticed. A discharge, if present, is invariably of an extremely chronic character and resists the usual forms of treatment. Frequency and dysuria are common. The abdominal symptoms are generally due to the peritoneal investment of the seminal vesicle and may simulate chronic appendicitis, ureteral colic, ureteritis, or stone. Perforations of bladder by abscess from vesicles have been reported. In this series of cases five per cent. had rheumatic complications. The sexual status in about 35 per cent. was a negligible quantity, presenting every phase of derangement from mild inaptitude to complete impotency.

In view of the fact that seminal vesiculitis is not a distinct entity, but is invariably associated with prostatitis, trigonitis, and urethritis, differential diagnosis from these conditions is obviously unnecessary. Renal, ureteral and abdominal conditions often necessitate careful consideration. Gonococcus was demonstrated in at least 80 per cent. of the cases studied, white staphylococcus next in frequency.

In all cases in which they identified the gonococcus, they obtained a positive gonorrheal complement fixation test of the blood; of the complement test, they state that it is important in demonstrating the true gonorrheal nature of a given case where the culture and smear fail, and it is important in confirming their culture work. It is a means of diagnosis, but is not a guide to treatment or cure, except with limitation. Seminal vesiculitis invariably indicates a thorough routine of vesicle and prostatic massage, urethral irrigations, applications, distillations, etc. There is danger of over-massage. Operation not advisable where psychic elements are extensively developed.

The following classifications are all surgical possibilities: (1) acute catarrhal cases with marked general and urinary symptoms, (2) chronic fibrous, sclerotic cases, unrelieved by treatment; (3) pus and blood after massage, or ejaculation; (4) vesicle cases causing any obstruction to the higher urinary tract.

[B. D. W.]

CONSTRICTURE OF THE VESICAL NECK IN THE FEMALE.

Caulk (*Journal of Urology*, Nov., 1921) raises the question concerning treatment of vesical irritability which will not respond to any usual treatment, as dilatations of the urethra, instillations, endoscopic applications, hydraulic extensions of the bladder, urinary antiseptics, sedatives, high frequency cauterization and such.

In the case reported he was attracted to a thickening in the region of the internal sphincter very similar to the contracture of the vesical neck in the male. With the cautery punch he removed a large bite of tissue from the median portion of the bladder neck. Much caution in cutting must be used as it is not far into the vagina and thus a vesicovaginal fistula would result. In the case reported the result was brilliant. His advocacy of this procedure is only for the rare case that does not respond to anything else.

[B. D. W.]

TOXIC SYMPTOMS FROM LOCAL APPLICATION OF BELLADONNA.

Ketkar (*Ind. Med. Gazette*, Dec., 1921) reports a case of acute orchitis treated locally with glycerin-belladonna paint. Twelve hours after this application the patient's tongue had a greenish-blue coating; there was dryness in the mouth, nausea, giddiness, flushed face, dilated pupils and an erythematous rash. The local application was thoroughly removed and an emetic was given. The writer believes individual idiosyncrasy responsible for the toxic effects of the glycerin-belladonna paint, which is largely used in India without harmful consequences.

[L. D. C.]

A CLINICAL STUDY OF HALLE'S HYPOTHESIS CONCERNING RENAL TUBERCULOSIS.

Hamer and Mertz (*Journal of Urology*, Nov., 1921) say: Halle's Hypothesis divides chronic renal tuberculosis into three forms: the first, primary closed parenchymatous renal tuberculosis; the second, open tuberculous pyelitis; the third, combinations of the two preceding forms. The Hypothesis then takes up the avenues of infection resulting in the three forms:

I. Ascending urinary infection may be considered as occurring but seldom, if at all.

II. That the haematogenous is the only one which satisfactorily explains the genesis of the primary intraparenchymatous tubercles.

III. That the primary, open tuberculous pyelitis infection is probably of lymphatic origin.

IV. Thus the mixed forms are infected by both the haematogenous and lymphatic route.

A cure is "When all the physical signs and functional symptoms of the patient have disappeared, when the patient has regained a local and general health, when all pus and bacteria have disappeared from the urine, when all bladder symptoms have ceased, and when the patient's general health is good."

Halle says "there is no proof that all chronic renal tuberculosis may not be cured spontaneously or by medical treatment, and that the dictum, 'nephrectomy is the only rational treatment,' is not justified."

The authors present 28 cases divided according to the Hypothesis. In three the clinical diagnosis was made but the diseased kidney was not removed. In 24 cases nephrectomy was performed. In one the kidney was studied at autopsy. Seven had parenchymatous lesions only. Five had pyelitis lesion alone, and in 16 mixed lesions existed.

The conclusion is that a diagnosed tuberculous kidney should not be treated by medical measures, thereby hoping for a cure, but, no other contraindications existing, surgery should be undertaken. While at present in most instances of closed parenchymatous tuberculosis the kidney lesion remains undetected in its early stages, if in the future the recognition of its progress becomes possible, if unilateral, nephrectomy is still indicated because of its bearing upon the later development of a toxic nephritis in the opposite kidney.

[B. D. W.]

SUPRAPUBIC VERSUS PERINEAL PROSTATECTOMY. A COMPARATIVE STUDY OF NINETY PERINEAL AND THIRTY-EIGHT SUPRAPUBIC CASES.

Hinman (*Journal of Urology*, Dec., 1921) says that it seems logical to conclude that in our hands Young's method of perineal prostatectomy is superior to the Fuller-Freyer method of suprapubic prostatectomy. The fatalities have been surprisingly few and due in the two instances to avoidable accidents. The functional results even in our earlier cases are unusually good in view of the advanced and complicated conditions treated. The general results are much better than those obtained suprapubically. No doubt greater experience would materially improve our suprapubic results, but we have grave doubt of ever being able to so perfect our suprapubic technic as to make it as surgically safe as the perineal. If we were to continue doing suprapubic prostatectomy we would unhesitatingly adopt as our routine in all cases just as careful and prolonged catheter preparation as for perineal, then preliminary cystotomy, followed by enucleation after a suitable interval. The perineal method has greater difficulties of anatomical approach, but our experience proves that they can be mastered. The important detail of surgery by either method in order to be certain of cure is complete enucleation and good structural restoration. The only doubt of the perineal results in this respect is their permanence. The immediate results in our last 25 cases in which we have practiced radical *en masse* enucleation, are in every way satisfactory. This slight modification in perineal technic gives every assurance of complete and regular enucleation which we believe is even more certain and surgical than possible suprapubically. The cure, therefore, cannot fail of being just as lasting and permanent. Functional results being as good or better and as complete, the saving of several lives in every 100 that would be sacrificed by the suprapubic method leaves no room for hesitancy in the registration of our conviction that perineal prostatectomy is worthy of continuation in our hands and that its principles and technic are worthy of being taught to others.

[B. D. W.]

EXPERIENCES WITH RADIUM IN CANCER OF THE PROSTATE.

Bugbee (*Journal of Urology*, Dec., 1921) reports 17 cases in detail, giving exactly how large doses, where, and via which route the radium was applied.

Five of these cases were treated by radium needles through the perineum and direct applications to the rectal surface of the prostatic lobes. Four of the five had intraurethral applications as well. In three of the five there is at present no hard tissue to be palpated per rectum; in one a single firm nodule, much reduced in size, is still present, and in the fifth, a rapid softening of the extensive infiltration is taking place, three-fourths of the original growth having disappeared. Two patients with hard, small, constricting prostates, one with nodules, the other with a hard posterior lobe, treated by the punch and radium, are distinctly improved. The hard nodules have disappeared and the residual diminished.

Four patients were given suprapubic drainage only; all were victims of systemic cancer, the drainage being given to relieve the distressing bladder symptoms only.

In none would it have been justifiable to add to the toxemia by attempting destruction of the growth by radium. Two died of systemic disease months after the drainage. The other two are alive, comparatively comfortable as regards the bladder, but failing from general carcinomatosis.

Four cases opened suprapubically and given application with needle from above through the entire prostate to the rectal wall, destroying cylinders of tissue in close proximity to the urethra and also needles introduced into the perineum, honeycombing the larger masses of cancer, are interesting. In two retention was complete; in one six ounces, and in the fourth one ounce. The involvement was extensive in all. One supplemented by surface application empties his bladder and the drainage wound is healed; no indurated areas can be palpated. A second is still draining, although no growth is palpable. The other two have suprapubic tubes. The growth in each has diminished in size. The rapidity with which these masses shrink and soften under applications of radium following needling is astonishing.

One patient, in whom a resection of the bladder wall and the prostate was carried out with subsequent external applications of radium, is free of recurrence one year after operation. The last case treated by perineal needles is improved.

[B. D. W.]

PERINEAL PROSTATECTOMY. A DETAILED STUDY OF ONE HUNDRED CONSECUTIVE CASES.

CECIL (*Journal of Urology*, Dec., 1921) believes that the best results obtainable in prostatectomies are by the perineal route; though he feels that suprapubic prostatectomies in competent hands offer splendid results and in the hands of those less competent better results than can be obtained in any other way. It is very definitely felt that the suprapubic space is more susceptible to infection and corresponding absorption than is the perineum.

His observations have been gone into in detail but will be of little statistical value unless those who are doing suprapubic prostatectomy will present statistical studies in such detail as to be of real value

This series is concerning 103 cases who presented themselves with prostatic obstruction: 100 were operated on; two deaths occurred during preliminary treatment; both were toxic from back pressure; stimulants and infusions were of no avail. In one case operation was refused because the case had oedema of lungs and dilated heart, with murmurs, and a pulsating liver.

Youngest case operated on was 52; oldest, 90; greatest number were 67.

11 per cent. had had trouble for 10 years.

28 per cent. had come for treatment within first two years.

65 per cent. noticed frequency as initial symptom.

43 per cent. had difficulty with urination.

18 per cent. associated pain.

30 per cent. had complete retention at admission.

12 per cent. had used catheter at intervals. Hematuria occurred some time during course of disease in 15 cases; in 14 the hematuria was associated with beginning growths.

64 cases showed infected urine; 75 had albumin.

Residual urine was determined in 95 per cent. of the cases.

9 per cent. had 1000 c.c. or more; 27 per cent. had 500 c.c. or more: one case showed 4750 c.c. residual urine.

13 per cent. showed no enlargement on rectal examination.

53 per cent. gland was described as moderately enlarged.

Malignancy appeared in 11 cases; 8 of these were stony hard on examination.

Vesical calculi were present in 9 cases, diverticula in 8.

79 out of the 81 cases cystoscoped showed varied amount of trabeculation.

In 93 cases preliminary treatment was carried by retention catheter combined with intermittent catheterization. Two cases came in with suprapubic drainage and four were thus opened after admission.

Where large residual is present intermittent catheterization is the best; 32 per cent. were drained from two to four weeks.

50 per cent. were out of bed during entire preliminary treatment: 51 per cent had fever; 2 cases, gall-bladder infection; 4 had epididymitis, and one, arthritis.

The phthalein test was used the day before operation for kidney efficiency as routine. The operative technique was the Young procedure in every case. There were no cases of perineal fistula.

In 51 per cent. of the cases the wound had closed before the 19th day and 74 per cent. before the 24th day.

One case of permanent incontinence occurred; there had been previously an operation for stricture.

The prostatic mortality rate was 2 per cent. Two deaths from pneumonia on the 14th day; both were hemiplegia. [B. D. W.]

AN OPERATION FOR THE CURE OF INCONTINENCE ASSOCIATED WITH EPISPADIAS.

YOUNG (*Journal of Urology*, Jan., 1922) says that the most important previous article on epispadias with incontinence concerns the female, but many of the problems are similar in the male. A number have felt that the only relief from this kind of incontinence was transplantation of the ureters or elliptical portion of the trigone of the bladder, containing the ureteric orifices into the pelvic colon. Many articles quoted did nothing radical for the incontinence but contented themselves with a plastic operation upon the epispadias. In 1908 the author brought up a new procedure for the cure of incontinence of urine by suture of the urethra and vesical sphincters. The operation consisted of, first, suprapubic cystostomy; excision of mucous membrane along the posterior portion of the vesical orifice, uncovering the muscle; closure or narrowing of the prostatic orifice by transverse sutures of catgut; second, exposure of membranous urethra through the perineum, excision of mucous membrane of the floor on each side, exposure of sphincter muscle, closure with several layers of catgut sutures; third, suprapubic drainage. The result in this case was perfect.

Since then several cases of incontinence of urine, mostly post-operative, have been operated upon by this procedure with very satisfactory results. The paper is concluded by two very interesting cases given in detail, accompanied by very clear and excellent drawings. [B. D. W.]

CALCIFICATION OF THE SEMINAL VESICLES.

KRETSCHMER (*Journal of Urology*, Jan., 1922) declares that clinical interest in the subject of calcification of the seminal vesicles is apparently not very great, as evidenced by the scarcity of literature on this subject. A few of the well-known roentgenologists were written to, but none have definitely met with the condition.

The case reported showed extensive calcification of one seminal vesicle in a boy 14 years old. A previous diagnosis of stone in the bladder had been made and cystostomy done; no stone was found. A persistent sinus followed. Repeated examinations for tb. were negative. X-ray showed the shadowgraph catheter apparently laid in contact with the shadow under consideration. But rectal examination demonstrated a definite interval existed between this hard, calcified seminal vesicle and the shadowgraph catheter. A later diagnosis of left, pus kidney, probably tuberculous, was made. Nephrectomy was done. A guinea-pig subject showed acid fast bacilli. The suprapubic fistula was closed by operation.

There are probably two types of calcification which occur in seminal vesicles: Senile, because it occurs in men of advanced years, and calcification due to tuberculosis. [B. D. W.]

EXCRETION OF DYES.

SAXL AND SCHERF, from Winckebach's first medical clinic at Vienna, report (*Wien. klin. Woch.*, Feb. 9, 1922) a study of the excretion of dyes in the gastric juice and bile. They find that this occurs after parenteral introduction of methylene blue, and is hastened by the presence of gastric or duodenal ulcer. [R. M. G.]

Malignant Disease of the Adrenals, with Report of a Case.

Fuller (*Journal of Urology*, Jan., 1922) says that clinical manifestations of malignant tumors of the suprarenal glands are by no means pathognomonic. In addition to benign tumors, which occur in the greatest variety, we find true carcinomas and sarcomas. The latter malignant growths present many peculiarities in their growth and cellular pattern.

Palpable tumors present hard differentials, as perirenal abscess, growth of the kidney, gall-bladder, spleen, liver, etc. Ever present aids are urine analysis and pyelography.

Sarcoma is the most common of the primary malignant tumors of the adrenal.

The author reports a case in detail in which correct pre-operative diagnosis was made by careful study. The mass could not be removed by operation and patient died. The post-mortem, given in detail, gives the diagnosis of the tumor mass as a large, round-celled sarcoma. [B. D. W.]

Modification of Differential Functional Test with Phenolsulphonephthalein.

Peterson (*Journal of Urology*, Jan., 1922) feels that under ordinary conditions there is probably leakage by the ureter catheters into the bladder, or there may be traumatic hemorrhage on insertion of ureteral catheters, causing poor drainage, and thus the usefulness of the differential test is often diminished.

After ureter catheterization has been accomplished and specimens collected for microscopic examination, one c.c. of phthalein is given intravenously, its time of appearance noted and the phthalein collected for 15 minutes. The bladder specimen is obtained either by having the patient void or drawn by a soft catheter.

An equal number of cubic centimeters, usually five c.c. or less, of each kidney specimen is now accurately measured into a suitable glass graduate and a few drops of sodium hydrate solution added to each. Each specimen is diluted with distilled water to 200 c.c., filtered and read in the colorimeter. The strength of color expressed in per cent. represents the concentration of the phthalein excretion from each kidney during the period of observation, without reference to the quantity actually excreted, and is constant without consideration of leakage into the bladder. Upon the completion of the concentration reading the remainder of each specimen is added to its respective side and the quantitative test completed in the usual way. This has been found of distinct value in the instances where marked leakage into the bladder has occurred.

[B. D. W.]

Treatment of Malignant Disease of the Prostate and Bladder.

Geraghty (*Journal of Urology*, Jan., 1922) writes that in the past 20 years the Urological Department of Johns Hopkins Hospital has registered approximately 450 cases of cancer of the prostate. In about 75 per cent. of the cases of cancer there was an associated prostatic hypertrophy. Cancer occurs in the same period of life as prostatic adenoma, so that the age of incident is of little value in the differential diagnosis. Unfortunately, cancer of the prostate seldom produces symptoms until the disease is far progressed. Urinary symptoms, as a rule, are not produced until the vesical orifice or prostatic urethra becomes extensively involved, leading to their contracture.

In only 21 cases out of 400 was the cancer found confined to the prostate; it was considered possible to excise all of the cancerous tissue. In 95 per cent. of the cases surgery alone is hopeless so far as complete extirpation of the malignant disease is concerned.

The use of radium was begun in 1915. Since then it has been used in 150 cases alone or in conjunction with operation. Up to 18 months ago radium was used exclusively through the urethra and per rectum against the prostate. Those treated through the rectum usually show marked thickening and edema with considerable congestion, occasionally ulceration. Some developed obstruction, and colostomy was necessary. During the past 18 months the radium has been applied by needles inserted through the perineum into the prostatic tissue.

The cases thus treated changed markedly the consistency of the prostate, making it rather elastic, but relief of the obstructive symptoms was not proportional to the apparent change in the prostate. This is probably due in that a large percentage of carcinoma is associated with hypertrophy, and radium has little or no effect on adenomatous lobes.

Perineal prostatectomy is used to remove obstruction, and radium needles are then inserted in the cancerous tissue remaining that could not be reamed out. Obviously the application of radium to the prostate can have no influence on the pains due to metastasis.

Part II—Bladder.—Fulguration should be the method of choice in all benign and malignant papillomata which can be reached by endovesical means. Where the tumors are resistant to fulguration or are papillary carcinoma, non-infiltrating or superficially infiltrating, radium will give uniformly good results, and the result will be obtained by surface application to the tumors. Where the tumors are equally and distinctly infiltrating but sufficiently localized that resection could be carried out and the growths removed with a definitely healthy margin of tissue, this procedure should be employed and radium therapy not depended upon. Where, following the removal of the growth, the operator feels that possibly he has not given sufficient margin at any one point, radium should be inserted in the contiguous tissue. In the very extensive cases of carcinoma in which it is impossible to satisfactorily carry out endovesical treatment with radium, it is our custom now to open the bladder suprapubically, destroy as much as possible of the tumor or tumors with the actual cautery, and then implant radium emanation tubes approximately at one to two centimeters distance from each other. What is to be expected from radium applied in this way in these perfectly hopeless cases it is too soon to pass judgment. So far, our results in these otherwise hopeless cases have not been very brilliant.

This paper is completed by seven plates showing the procedure of perineal prostatectomy.

[B. D. W.]

A Survey of the Treatment of Acute Gonorrhea in the Male.

Fraser (*Journal of Urology*, Feb., 1922) says that while gonorrhea occupies a lowly place as a killing disease, it unfortunately commands a very high position as a cause of disablement and ill-health. In the male it does not fall very far short of syphilis in this respect, but in the female it possibly supersedes it.

The author divides his treatment measures under seven headings:

1. General treatment: (a) Hygiene of the patient—Mental and physical cleanliness; purging; rest; correct support of scrotum. (b) Exercise—All active exercise forbidden, at least for first ten days. (c) Hydrotherapy—Minimum of 25 glasses daily; lime water; barley water. (d) Diet—Highly spiced foods, chutneys, sauces, pickles, coffee and strong tea avoided; absolutely no alcohol.
2. Medicinal treatment: (a) Antiseptics—Their use has now become obsolete and they are never indicated. (b) Sedatives—Forced fluids and alkali for burning; bromides for painful erections; morphine subcutaneously and ergot orally for hematuria; opium suppositories for loss of sleep. (c) Aperients—Salts of magnesium. (d) Diuretics—Alkalies and alkaline diuretics.
3. Local treatment: Urethral irrigation, urethral-vesical irrigation, urethral injection, and urethral instillation. The second is most satisfactory, as safest to inflamed mucous lining—potassium permanganate is best, holds a position all its own, though there is nothing ideal to fulfill the following—non-irritating to the tissues, penetrating to living tissues, toxic to the gonococcus, has not the property of precipitating albumin, is capable of dissolving pus and mucus, is capable of producing a free flow of serum from the inflamed surface.
4. Vaccine treatment: At the present time vaccine fulfills two functions in the acute stages of gonorrhea: 1. To promote increased resistance on the part of the blood to the attacking organisms. 2. To attack the organisms that have penetrated the urethral mucosa and are out of reach of the irrigating fluid. 3. To serve as a test of cure. The author discusses the various vaccines and notes the results.
5. Serum therapy is absolute failure in acute gonorrhea.
6. Chemo-therapy: the results shown here were uncertain and usually disappointing.
7. Electro-therapy showed apparently excellent results in the hands of Russo, who evolved this treatment.

[B. D. W.]

GONOCOCCAL INFECTIONS OF THE KIDNEY.

SIMMONS (*Journal of Urology*, Feb., 1922), in review of the literature, finds only 24 true cases of gonococcus infection of the kidney. There are cases reported of superimposed pyelitis with a gonorrheal urethritis. Usually the cause is the colon bacillus, the tubercle bacillus, or the staphylococcus. The discussion of route of kidney infection is given in fair detail. The conclusion arrived at in these cases is that they are of the hematogenous route, rather than a urinary ascending infection. The occurrence of kidney involvement of the acute urethritis varies from ten days to nine years.

A case is reported of a negro brought into the hospital with an acute abdomen without distention. The peritoneal cavity was normal, but congestion in the right upper quadrant of the omentum. A mass was felt in the region of the right kidney. A lumbar incision was done and a ruptured kidney exposed. It was drained, purulent fluid exuded, cultures and smears showed pure gonococcus. There is an accompanying table of the previous 24 cases found in the literature.

[B. D. W.]

CHRONIC INFECTIONS OF THE MALE URETHRA AND ITS ADNEXA.

PAUL (*Journal of Urology*, Feb., 1922) says that a review of a hundred cases brings a conclusion that every male with the slightest symptom of a post-gonorrheal infection of the urethra and its adnexa is potentially infectious. That gonococci may persist in the male urethra or its adnexa for years. That the gonococcus may become imbedded in the male urethra without causing any of the symptoms of an acute inflammation. That unless infections of the adnexa are eradicated, cure of the urethral condition is next to impossible. That vaccines are of little direct benefit in the treatment, except to hasten the eradication of the gonococcus. That in the large majority of the cases these infections can be totally eradicated by appropriate treatment, irrespective of the length of time elapsed since the original infection.

These cases conform to the following clinical condition before being discharged as cured: Absence of urethral discharges, absence of any urinary disturbance, the urine macroscopically free of cloudiness, filaments, shreds or flakes, the urine free of microscopic pus, the whole urethra free from infiltrations on inspection. The prostate and seminal vesicles normal on palpation. Secretions of prostate and seminal vesicles showing not more than three pus cells to the high power field on two films, made three to eight weeks after treatment had been discontinued. The paper is concluded with four illustrated cases to emphasize a number of these conclusions.

[B. D. W.]

THE OPERATIVE TREATMENT AND PATHOLOGY OF ACUTE EPIDIDYMITIS.

CUNNINGHAM AND COOK (*Journal of Urology*, Feb., 1922) declare that the clinical conclusions are that epididymotomy is a rational procedure for active, acute, and recurrent acute and subacute epididymitis, being the application of the general surgical principles of drainage to an inflamed structure with the same beneficial results here as in other structures.

The operation is, however, an attack on but one organ in a series of organs infected, and the inflammatory process in the seminal vesicle and prostate still remains in some degree and requires subsequent treatment. It is believed, moreover, that drainage of the epididymis has a beneficial influence on the inflammatory process in these organs, as they are freed from the influence of the products of inflammation drained by them from the infected epididymis, and in consequence of this the duration of treatment of the seminal vesicle, prostate, and urethra is materially lessened by the operation of epididymotomy. The immediate effect of the operation is a rapid relief of pain and the high temperature and leucocytosis drop rapidly to normal, and the individual is able to return to his duties about five times as soon following the operation as when treated by non-operative methods. Recurrent epididymitis following epididymotomy is rare, and sterility is less often a permanent defect.

The pathology demonstrates a rapid destructive process in the tubules and intratubular tissue, ending with permanent defect in these tubules, and argues in favor of supplying surgical drainage early if the process is shown clinically severe; for upon the early termination of the destructive inflammatory process will depend the prevention of permanent impairment of the function of the ductus epididymis.

There are two microphotographs illustrating the pathology of this condition.

[B. D. W.]

THE BOSTON
Medical and Surgical Journal
Established in 1828

Published by The Massachusetts Medical Society under the jurisdiction of the following-named committee:

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The Journal does not hold itself responsible for statements made by any contributor.

Communications should be addressed to The Boston Medical and Surgical Journal, 126 Massachusetts Ave., Boston, Mass.

THE LOCAL ABRAMS REPRESENTATIVE.

A few weeks ago a young man applied to Dr. Philip A. E. Sheppard for treatment. According to papers submitted to the Board of Registration in Medicine, Dr. Sheppard drew a drop of blood from this patient and forwarded the specimen to Dr. Abrams, in California, for a diagnosis. The report from Abrams set forth that the patient had a certain number of ohms of syphilis and another number of ohms of sarcoma. At a hearing conducted by the Board of Registration the patient testified that Dr. Sheppard spoke of the cost of treatment to him by the Abrams method as five hundred to a thousand dollars. At a subsequent hearing the use of the instruments employed for diagnostic purposes was explained by Dr. Sheppard. It was claimed that some sort of activity, spoken of as radio activity, was set up by a machine which was grounded to a water pipe or radiator, and by the use of another person the current (if there is any) passes through a living subject and also through the drop of the blood of the patient; and the resistance to the current, as shown by ohms, registered on a dial, produces dullness over certain abdominal areas of the healthy person employed to develop the reaction; one area for cancer, another for syphilis, others for sarcoma, tuberculosis, streptococcic infections, and so on. These areas are determined by percussion.

Dr. Sheppard testified that by this method it was shown that he himself had had sarcoma of the gall-bladder, and the application of the proper treatment relieved him of his symptoms and he is now free from discomfort. His claims of efficacy by means of this treatment and the accuracy of diagnosis secured by this method were endorsed by Dr. Hilfer of New York and New Jersey, who claimed to have been cured of "acquired syphilis" by this method. He took pains to explain that the disease was acquired in childhood through a scratch.

The Board of Registration in Medicine conducted the hearing for the purpose of ascertaining whether the acts of Dr. Sheppard constituted violation of Section 61 of Chapter 112 of the General Laws of Massachusetts, in which section the Board is given authority to suspend or revoke the registration of a physician guilty of deceit, malpractice or gross misconduct in the practice of medicine. Eminent professors connected with technical and medical schools testified that the description of the apparatus and the evidence claimed to have been elicited by its use did not conform to any accepted knowledge on these subjects; the physicians especially stating that they had not been convinced of any valuable information imparted by the apparatus or methods employed.

Dr. Sheppard was ably defended by Mr. Thomas W. Proctor, who emphasized the lack of experience in the use of the instruments or methods by the scientists and advanced the argument that since none of them had actually used this method they could not assume to know whether it was of value or not. At one stage of the proceedings the secretary of the Board explained to Mr. Proctor that the Board was in duty bound to try to determine the ability of Dr. Sheppard to practise medicine by this or any method, and Mr. Proctor readily asserted that if that was the object of the inquiry it was of no use for him to defend his client. There seemed to be passing through the mind of the attorney serious doubt as to the usefulness of this fantastic method, as well as the quality of professional service rendered, but his argument was based on the contention that if Dr. Sheppard was honest in his belief and tried through this method to help his patient he was blameless.

Like most people who adopt unrecognized and unusual methods of medical treatment, Dr. Sheppard is a ready and enthusiastic speaker and would be very likely to secure patients from those who are impressed by spectacular exhibitions.

The decision of the Board will be rendered at a later date.

HOW SHALL WE DEAL WITH OUR SPECIALISTS?

THE Council on Medical Education of the American Medical Association has recommended the reorganization of the undergraduate curricula in medical schools with the purpose of educating larger numbers of general practitioners and not so many specialists. Another recommendation is that the states should require evidence of special training before permitting a physician to hold himself out to the public as a specialist.

The first has been a favorite theme for discussion for several years. It is a popular subject because smaller communities need more physicians, and among physicians the general practitioner has found that the specialist is getting much work formerly done by the family attendant, and in some instances the latter claims to have reason to feel or suspect that the specialists are using unfair methods in efforts to secure and keep patients. The wise, well-equipped family doctor has been rather effusively praised and the specialist more or less gently criticised.

The subject is broader and deeper than appears on the surface. Beginning with the medical schools—ought we to criticise their methods under existing conditions? The managing boards of Class A schools are ambitious to meet or even exceed the standards of the Council on Medical Education, both in the premedical requirements and in the four years of medical study. They select eminent men for professors and teachers. Each member of the faculty of a Class A school has attained his position through industrious application of his well-trained intellect. He makes his department attractive to a certain type of student. Those who are inspired by him and find his subject interesting naturally enjoy the pursuit of knowledge under his instruction. Those who thus react naturally develop into specialists in this particular field. So on through the various departments of the school. Having accepted only high grade young men, why should not most of these students enjoy intensive study along the lines particularly attractive to each, after having covered the fundamental branches?

Some students naturally devote only a required amount of time and energy to subjects of minor interest. It is far easier to concentrate on one subject or a coördinate group than to try to absorb all that is taught in all the departments, so that unless the medical school definitely restricts intensive and somewhat exclusive study, specialism is the natural resource for the well-endowed and trained student. The large number of specialists demonstrate this tendency of the schools and the inclination of those seeking instruction.

If methods of instruction are to be changed there must be reorganization of the faculties, and each of the major departments of general medicine, surgery, obstetrics and pathology will have to be placed under the control of a group of teachers consisting of, first, a good organizer, and second, associates who can work harmoniously. The eminent operator or investigator might have to occupy a less prominent position on the faculty than is the custom now in the undergraduate field and do more of his teaching in post-graduate work, dealing with those men who are willing and able to devote years to detail study and practice as assistants.

The other question, dealing with state gradation of practitioners, is theoretically alluring, but there is probably little likelihood of the adoption of any plan involving state endorsement of the superman in medicine. State policies deal with standards for average proficiency rather than expert knowledge, and the adoption of state recognition and discrimination relating to experts would probably be restricted to those few states in which medical influence is greater than has been evident in the majority.

The classification of physicians could be done much better by the profession and could be brought about much easier than through legislative action. There may be fundamental objections even to this plan because the task would be difficult and those in charge of the work would be subjected to severe criticism. Even now, among groups of men working in the same field, there are wide differences of opinion relating to the qualifications of more or less prominent specialists. Theoretically, the American College of Surgeons should have placed its stamp of approval only on those who could qualify as expert surgeons. Whether the original ambitions of this college have been strictly adhered to is debatable, and yet the result may be fairly representative of human ability to measure up to ideals promulgated by pioneer leaders.

For the present, the publication of the membership of the various societies restricted to specialists would be a step in the right direction and would help the public and the general practitioner in avoiding the danger involved in association with the pretenders in medicine.

The unqualified specialist should be prevented from fooling the public, but even state societies are disinclined to attack him unless his behavior is extremely unsavory; and until the profession is disposed to enter upon a campaign of thorough house cleaning, the shrewd, unscrupulous and poorly equipped claimant for recognition as a specialist will furnish a subject for discussion, but concrete action may be long deferred.

If anyone can formulate plans which, if put in operation, will provide larger numbers of well-equipped general practitioners and only the requisite number of reliable specialists, his name should occupy a prominent place in the Hall of Fame.

In all probability, individual tastes and ambitions, together with economic conditions, will be the large factors in determining the relative number of general practitioners and specialists. Undoubtedly medical schools could bring about an increase in the number of general practitioners by adopting changes which would oblige students to devote more time to the general subjects and postpone special courses of study to post-graduate work.

NEWS ITEMS.

A demonstration clinical meeting was held at the Beverly Hospital, Thursday, June 1, at 4 p. m. Interesting cases were shown and discussion followed. Physicians and nurses were urged to attend.

Death Rate in Boston.—During the week ending May 27, 1922, the number of deaths reported was 173, against 213 last year, with a rate of 11.81. There were 18 deaths under one year of age, against 30 last year. The number of cases of principal reportable diseases were: Diphtheria, 51; scarlet fever, 46; measles, 201; whooping cough, 21; tuberculosis, 56. Included in the above were the following cases of non-residents: Diphtheria, 3; scarlet fever, 9; tuberculosis 2. Total deaths from these diseases were: Diphtheria 2; scarlet fever, 2; measles, 1; tuberculosis, 11. Included in the above was the following case of a non-resident: Scarlet fever, 1.

The Annual Dinner.—Every member of the society is urged to mail the card stating whether or not he is coming to the annual dinner on June 14. If a group of men wish to sit together a representative must apply either at the information booth at the Harvard Medical School or the booth at the Copley-Plaza on Wednesday, June 14, before 6:30 p. m. The speakers at the dinner will be Governor Channing Cox, the Rev. Willard A. Sperry, Professor Samuel Williston and District Attorney T. J. O'Brien.

Governor General Leonard Wood has started an extensive campaign to improve health conditions in the Philippines. Circulars setting forth the causes of various diseases and methods of stamping them out, have been posted throughout the islands. Four necessities for better living conditions in the Philippines mentioned by Governor General Wood are: More hospitals; more dispensaries; better distribution of medicines; additional nurses.—*The Nation's Health.*

Miscellany.

SECOND GROUP MEETING OF THE NEW ENGLAND SECTION, AMERICAN COLLEGE OF SURGEONS, MAY 15 AND 16, 1922, PORTLAND, ME.

These exercises were of great interest and were attended by many surgeons from the New England states. The executive committee, under Dr. E. G. Abbott, chairman, with Dr. W. H. Bradford and Dr. S. J. Beach, successfully arranged all details.

The demonstrations at the Maine General Hospital, Children's Hospital, City Hospital, the Eye and Ear Infirmary and Queen's Hospital covered a large range of surgical problems, and there was evidence of high-grade surgery in all of these institutions.

The social features of the luncheons were enjoyable.

The general policies of the college were set forth in the Hospital Conference. Dr. Franklin H. Martin, director-general, explained the minimum standards and gave the history of the survey: In 1918, 692 hospitals were examined and 89 met the required minimum standard. In 1919, 198 were added to the list; in 1920, 407 more were admitted, and in 1921, 579 more were approved.

The only step taken to secure adoption of minimum standards has been the publication of the accredited list.

The Eastern Maine General Hospital is the only one in Maine on the approved list.

During the present year all hospitals of 50 beds or over are to be visited and a report will be made in October.

Even after approval all hospitals will be inspected each year to determine whether standards are maintained. Last year $64,000 was spent in the survey; $25,000 was given to the college for this purpose.

Dr. T. E. Allen explained the methods employed in getting information. All surveyors are doctors and have the professional viewpoint. Each one has been an interne in a high-grade hospital, but not from the same hospital. He likened a hospital to an automobile, with the staff as the motive power. The staff must meet at least once a month and must work harmoniously. No "knocking" should be allowed. He regarded the laboratory as the carburetor. The question to be asked is whether the laboratory is used efficiently, for size does not determine that question. The hospital records may be spoken of as the mileage of the hospital and prove up the quality of the work done. Records do not make the hospital, but are evidences of the character of it. A plea was made for a welcoming hand to the inspector, for he will be generous and helpful.

Dr. George H. Stone, superintendent of the Eastern Maine General Hospital, Bangor, spoke of the purpose of a hospital, which is to provide the patient with the best possible treatment, and people are realizing that a hospital which can meet the minimum standard is the place where one will be able to secure the best results. He outlined three beneficial results used: First, better records; second, better laboratory work, with accurate records, and third, a more competent staff. Each one of these divisions was spoken of in some detail. From the superintendent's standpoint the efficiency of a hospital is based on the following conditions:

1. Harmony in the hospital family.
2. Better training schools for nurses.
3. Better trained internes.
4. Quicker turnover of patients.
5. Quicker and better response from appeals for funds.
6. Better satisfied patients on discharge.

Dr. John O. Polak of Brooklyn, N. Y., spoke of the fear entertained by surgeons that the standardization scheme would curtail their individuality, but this has not been the result. Hospitals are the places where scientific medicine is applied, internes and nurses are trained and *surgeons are made*. The importance of accurate diagnoses was emphasized and based on three considerations:

1. Suggestive symptoms; *i. e.*, history.
2. Confirmation by characteristic symptoms.
3. Laboratory findings.

The importance of staff conferences is beyond general comprehension, because each man's work is subjected to frank criticism and should mean that a man with an abnormally high mortality in his work should be asked to resign.

The minimum standard stimulates every worker in the hospital to do his best, and creates public confidence.

Dr. M. T. MacEachern of Ottawa, Canada, told the conference that the same methods are being applied in Canada as are being used in the United States; both the hospitals and the general public are showing great interest in the minimum standard plan. Even prospective nurses are asking the standing of hospitals before entering training schools. Speaking of the auditing and checking of the usual routine work in a hospital, Dr. MacEachern asked why the checking of records and care of patients should not be as searching as a review of business methods. He said that since the minimum standard had been in force in Canada the number of operations has been reduced about 10 per cent. and the average stay in hospitals has been reduced from 15 to 13.8 days. The people are asking the reason why, if a hospital is not in the accredited list.

The Rev. Father Moulinier, president of the Catholic Hospital Association, spoke of the great power and influence of the American College of Surgeons and affirmed that the scientific soul of standardization is the scientific soul of the medical profession. Doctors, nurses and trustees of hospitals must be organized and must work together. Speaking especially of the necessity of keeping records, he predicted that the medical growth of the next 25 years would depend largely on the quality of records kept.

Mr. Jolly, superintendent of the Baptist Sanitarium, Houston, Texas, spoke of the critical attitude of the public and the expectation of progress by the laity, for coincident with the general progress of human affairs, hospitals must keep step with all other evidences of better service.

The public meeting was well attended. The Governor of Maine, the Hon. P. P. Baxter, gave the address of welcome, and the various subjects relating to hospital efficiency were presented to the public in very much the same manner as in the program at Springfield last year.

Taken all in all, the meetings were of great interest, and it seemed to be the consensus of opinion that a great deal had been accomplished.

◆

THE INSTITUTE FOR SCIENTIFIC ASSISTANCE.

THIS organization was founded in Vienna in 1917 as an aid to those who require assistance in covering the literature relating to a given subject. Its activities are not confined to the compilation of medical bibliographies, but include certain subjects in the fields of engineering, physics, chemistry and sociology. The bibliographies are not made to order but are issued from time to time and concern certain rather large divisions of medicine. For example, Röntgen literature from 1914 to 1917 is compiled in one volume. Some bibliographies contain titles only, others consist of abstracts. The prices range from three to twenty-five dollars. A catalog may be obtained from the Institut für Wissenscheftliche Hilfsarbeit, G. m. b. H. Wien.

◆

AMERICAN RELIEF ADMINISTRATION.

MOSCOW.—Dr. Edmund A. Walsh, regent of the School of Foreign Service, Georgetown University, and prominent lecturer, who arrived here recently to formulate a plan for the disbursement of the National Catholic Welfare

Council funds along relief lines adopted by the American Relief Administration, has returned from the Samara famine district, where he spent several days.

"One of the things that has impressed me most since arriving in Russia," Dr. Walsh declared, "is the extraordinary organization built up by the American Relief Administration under Colonel William N. Haskell. The feeding of 7,000,000 people in a land as large as Russia is probably the most tremendous relief program in the history of the world. The activities of this same organization in Belgium, as far reaching as they were, could all be included in, say, the Samara district alone."

Dr. Walsh's plan in brief is to distribute food packages, purchased in large quantities through the Russian Food-Remittance Department of the American Relief Administration at New York. He has found that there is much need for this kind of relief among professional men and women, and the intelligence upon whom Russia must eventually depend for its existence.

"At the University of Samara, for example," he declared, "I found 200 professors working under most distressing conditions. Living on a meagre allowance of black flour and herring, they have kept open the university during the trying years following the revolution, although they have had to spend a large part of the time they might have been devoting to research work in outside employment in order to earn enough food to keep their families alive. Many of them are ill, others in a weakened condition, physically, as a result of overwork and undernourishment. I am making an appeal to the members of our profession in America to help such men as these."

Dr. Walsh found at Samara the wife of the famous Russian diagnostician, Bode, living with a family of five in two small and poorly lighted rooms. Madame Bode, who once held an enviable position as the wife of one of Europe's most noted specialists, he declared, was not only reduced to poverty but was on the verge of starvation. An oil painting of her husband, who died about a year ago, a few old pieces of furniture and a few pounds of flour were all that she possessed. Dr. Walsh arranged to have a food package delivered to her the night before Easter Sunday.

"It is this class of people," he said, "which suffers most.

"Before I left Moscow a doctor came to see me who was in a deplorable plight. The clothes he wore were shabby and had been mended many times. His shoes were entirely worn out. I gave him a food package, telling him at the same time that of course he was not to sell any of the contents. There is absolutely no check on these matters, but these people are on their honor, so to speak. The next morning he called me up and said that as it had turned so cold during the night he was unable to leave his room without shoes and therefore asked permission to sell a few cans of milk in order to buy a pair of shoes."

Dr. Walsh said that among the people who had called on him in Moscow was the daughter of Mendeleieff, discoverer of the law for arriving at atomic weights of the basic elements, and whose chart hangs in every chemistry classroom in the world. Although she was once wealthy she is now in need of food in order to keep alive.

CONGRESS OF THE HISTORY OF MEDICINE.

The Third International Congress of the History of Medicine will be held in London, July 17 to 22, 1922.

President of honor, Sir Norman Moore, Bt., M.D.; vice-presidents of honor, Sir D'Arcy Power, K.B.E., F.R.C.S., Dr. Tricot-Royer (Antwerp), Professor Jeanselme (Paris), Professor Ménétrier (Paris). President of the Congress, Charles Singer, M.D., D.Litt.; treasurer, W. G. Spencer, O.B.E., M.S.; general secretary, J. D. Rolleston, M.D.

The opening session will be at the Royal Society of Medicine, to be followed by receptions, banquets, visits to hospitals, etc.

Visiting ladies will be especially entertained by a committee of ladies.

Intending members are requested to communicate with the general secretary, Dr. J. G. Rolleston, 21 Alexandra Mansion, King's Road, S. W. 3, or the treasurer, Mr. W. G. Spencer, O.B.E., 2 Portland Place, London, W. 1.

GOVERNMENT NEEDS AIDES IN REHABILITATION OF DISABLED VETERANS.

The United States Civil Service Commission states that there is urgent need in hospitals of the United States Public Health Service and establishments of the United States Veterans' Bureau for reconstruction aides in physiotherapy and occupational therapy in connection with the rehabilitation of disabled soldiers, sailors and marines.

The commission will receive applications for these positions until further notice. Applicants are not required to report for a written examination, but are rated upon the subjects of education, training, experience, and physical ability.

Full information concerning salaries and requirements, and application blanks, may be secured from the United States Civil Service Commission, Washington, D. C., or the board of civil service examiners at the postoffice or custom house in any city.

Dietitians are also needed in these hospitals. Application blanks may also be secured from the commission.

PHYSICIANS WHO PERMIT PATIENTS TO VIOLATE QUARANTINE.

The Weekly Bulletin of the Department of Health of New York City states that heavy fines have been imposed upon several physicians who have permitted patients suffering from an acute communicable disease to leave their premises and in so doing violate quarantine before authorization has been given by the Department of Health.

The excuse of ignorance on the part of the accused physicians has not been accepted, for it is the duty of physicians to be familiar with sanitary regulations just as much as to know how to diagnose and treat diseases.

A careless or accommodating physician may be responsible for the spread of disease and perhaps death. Physicians should be made to feel that they are important factors in public health administration.

NOTES RELATING TO THE AMERICAN MEDICAL ASSOCIATION MEETING.

OFFICERS elected: President, Ray Lyman Wilbur, M.D., president Stanford University, California; speaker of the House of Delegates, F. C. Warnshuis, M.D., Grand Rapids, Mich.; vice-speaker of the House of Delegates, L. Rock Sleyster, M.D., Wauwatosa, Wis. The other positions were filled by reëlection of officers of the preceding year.

A definition of *state medicine* was adopted, which will appear in a report of the transactions, and a resolution providing for the publication of a lay medical journal was adopted.

The sentiment favorable to the development of greater numbers of well-trained general practitioners was quite evident, and there seemed to be a strong feeling in favor of encouraging the smaller well-managed medical schools. Some expression was given to the idea that the teaching machinery in medical schools was not altogether in proper form because of overlapping and underemphasis given to some specialties.

Dr. Mongan raised the question as to the justice of giving the sections of the scientific assemblies the right to send representatives to the House of Delegates, thereby conferring on one person, in some instances, the privilege of a dual vote. This objection also applies to the delegates from the medical departments of the army and navy and Public Health Service. He filed notice of a proposed change in the constitution covering these points, which has to lie over one year.

JOHNS HOPKINS SCHOOL OF HYGIENE AND PUBLIC HEALTH.

IN October, 1918, there was opened a School of Hygiene and Public Health in connection with Johns Hopkins University. This school was made possible by the coöperation of the Rockefeller Foundation.

"The main objects of the school are to establish courses for the training of qualified persons for public health work, to promote investigative work in hygiene and preventive medicine and provide opportunities for the training of investigators in these subjects, and to develop adequate means for the dissemination of sound hygienic knowledge. Special and mutual advantages arise from the close relationship between the school and the International Health Board of the Rockefeller Foundation, particularly in field work and in the opportunities for investigation and training in tropical medicine and the control of special diseases. As outlined at present the work of the school is organized under the following divisions: A department of bacteriology, serology and immunology; a department of medical zoölogy; a department of epidemiology and public health administration; a department of biometry and vital statistics; a department of chemical hygiene; a department of physiological hygiene; a department of sanitary engineering. Provision is made for instruction in personal hygiene, mental and social hygiene, and sanitary law. Facilities for field work are provided through coöperation with the state and city departments of health and also by means of a county health unit located at Hagerstown, Washington County. This unit is supported by four public health agencies: The State Department of Health, the United States Public Health Service, the International Health Board and the School of Hygiene and Public Health. Students spend part of their time in residence at Hagerstown to become acquainted with the organization and activities of this unit."

During the year 1921-22, 141 students were enrolled.

MATERNITY nursing by visiting public health nurses has reduced deaths of mothers 60 per cent., the number of stillbirths 70 per cent., and the number of infants dying under one month of age 50 per cent., according to Dr. Louis I. Dublin in the December *Public Health Nurse*.

The Massachusetts Medical Society.

MEMBERSHIP CHANGES FOR THE MONTH OF MAY, 1922.

OFFICIAL LIST (4TH).

Compiled by the Secretary of the Society.

ALPHABETICAL LIST.

Bell, James Francis, Jr., from Boston (Suffolk), to Portland, Oregon, 903 Journal Bldg. (Non-resident.)
Bolduc, Alfred George, Bayonne, N. J., 847 Avenue C.
Burt, Clarence Edward, New Bedford, now 544 County St.
Carleton, Ralph, Springfield, now 10 Temple St.
Cavanaugh, Thomas Edward, from Holyoke to West Springfield. Office, Springfield, 293 Bridge St.
Corcoran, George Bartlett, West Springfield, now 84 Park St.
Cotter, Edward Joseph, Jamaica Plain. Office now Boston, 510 Commonwealth Ave.
Dillon, William Joseph, Chicopee Falls, now 112 Main St.
Elkind, Henry Byron, from Worcester to Howard, Rhode Island State Hospital for Mental Diseases.
Emerson, William R. P., Boston, now 270 Commonwealth Ave.
Flood, Everett, from Mt. Dora, Florida, to Friendship, Maine.
Freligh, Claude Adelbert, from Palmer to Springfield, 175 State Street.
Fryburg, Charles August, Worcester, now 738 Main St.
Gibbs, Locero Jackson, Chicopee Falls, now 31 Broadway.
Gilchriest, Bernard Francis, Springfield, 647½ Main St.
Gilchrist, John Milton, Springfield, now 106 Chestnut St.
Golden, Ross, from Des Moines, Iowa, to New York City, Presbyterian Hospital, 70th St. and Madison Ave.
Gurjian, Leon Kevork, Worcester, now 204 Main St.
Hanley, John Joseph, died at Southcroft, Motherwell, Scotland, July 26, 1921, on his 54th birthday.
Hartwell, John Bryant, Colorado Springs, Colo., now 1211 North Tejon St.
Hill, Lewis Webb, Boston, now 483 Beacon St.
Holmes, Colin McLean, Springfield, now 310 Main St.
Hussey, Earle Edward, Fall River, now 245 Cherry St.
Kilburn, Ira Nelson, Holyoke. Office, Springfield, 6 Maple St.
Kurth, Harold Richard, from Lawrence to Methuen. Office, Lawrence, 477 Essex St.
Lane, Clarence Guy, Woburn. Office, Boston, 421 Marlborough St.
Little, Abby Noyes, from Newburyport (Essex North), to Turkey in Asia, Diarbekir, Near East Relief (Non-resident).
Lougee, Frank Taylor, from Newton (Middlesex South), to Lynn (Essex South), 11 Atlantic St.
Lovell, Martha Eleanor, from Brookline (Norfolk), to Winthrop, 233 Woodside Ave. (Suffolk).
Lowney, Dennis Joseph, New Bedford, now 72 Foster St.
Lynch, Charles Francis, Springfield, now 387 Main St.
MacMichael, Earle Haggert, Malden, now 77 Summer St.
Mannix, Louis Edward, Chicopee Falls. Office, Springfield, 293 Bridge St.
Marcy, Henry Orlando, Jr., died at Newton, May 29, 1922, aged 50.
Moriarty, Patrick Maurice, Chicopee, now 51 Center St.
O'Hara, Francis James, North Adams, now 57 Main St.
Osgood, George Edward, from St. Petersburg, Fla., to Wells, Maine.
Owen, Albert Simpson, Framingham, now 60 Proctor St.
Pattrell, Arthur Ellis, from North Grafton (Worcester), to Roxbury (Norfolk), 74 Fenwood Road.
Peck, Martin William, from Roxbury (Norfolk), to Boston (Suffolk), 503 Beacon St.
Penhallow, Dunlap Pearce, New York City, U. S. P. H. S., 23 West 43d St.
Pettey, John Anderson, Brockton, now 63 Main St.
Praino, Gaetano, from South Boston to Boston 11, 273 Broadway.
1913 } Albert, Lionel Louis, Central Falls, R. I., 62
1922 { Pacific St.
Readmitted by Censors, May 4, 1922.
Pratt, Emily Adelaide, New York, now St. George, Staten Island, 348 St. Mark's Place.
Prenn, Joseph, Worcester. Office, Boston, 536 Commonwealth Ave.
Quinn, James Henry, Springfield, now 387 Main St.
Rand, John William, Amesbury now 110 Main St.
Remick, Sumner Haven, change from Remich.
Rood, Adolphus Duncan, Springfield, now 40 High St.
Shadman, Alonzo Jay, Jamaica Plain, now 218 South St.
Sprague, Russell Bradford, from Foxborough (Norfolk), to Boston (Suffolk), 520 Commonwealth Avenue. (Action of Council June 9, 1914.)
Thayer, Eugene, Roxbury, now 2683 Washington St.
Tigh, Frederick, Newburyport, now 124 High St.
1910 } Toppan, Albert Brookings, Watertown, 293
1922 { Mt. Auburn St.
Readmitted by Censors, May 4, 1922.
Verde, Luigi P., from Cambridge (Middlesex South), to Dorchester (Norfolk). Office, Boston, 372 Hanover St.

ADDRESSES WANTED

Azadian, David George.
Bardwell, Frederick Albert.
Gervais, Harriet Marion.
Lawlor, John Charles.
McClintock, Elsie.

Changes of address should be sent to the Secretary, Dr. Walter L. Burrage, 42 Eliot Street, Jamaica Plain 30.

Obituaries.

HENRY ORLANDO MARCY, JR., M.D.

Dr. Marcy died at his home in Newton, following an illness of several weeks, May 29, 1922, at the age of 50. He was born in Cambridge, where his father, Dr. Henry O. Marcy, had lived and practised for many years, on July 2, 1871, his mother being Sarah Wendell Marcy.

After attending Boston Latin School, Dr. Marcy was graduated from Harvard College in 1893 and from Harvard Medical School in 1897, then serving as house surgeon at the Roosevelt Hospital, New York City, for two years.

On his return to Boston he was associated with his father, both at an office on Commonwealth avenue and at the private hospital in Cambridge. He married Miss Eleanor Nichols of Newton, who survives him as well as a son and a daughter.

Among his memberships he numbered the Massachusetts Medical Society, the American Medical Association, the American Academy of Medicine, Roosevelt Hospital Alumni Association, Boston Society of Medical Sciences and the Harvard Medical Alumni Association.

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JOHN ALLAN WYETH, M.D.

DR. JOHN A. WYETH, who died of heart disease in New York on May 28, 1922, in his 78th year, was one of that band of Southerners who came to New York to make a high reputation in medicine. We have only to mention J. Marion Sims, Thomas Addis Emmett, Nathan Bozeman and W. M. Polk to recall some of the great ones.

Dr. Wyeth's chief contribution to medicine was the founding of the first post-graduate medical school in the United States, the New York Polyclinic Medical School and Hospital, which had its beginning in 1882. Dr. Wyeth was professor of surgery and president of the faculty, in the school he had organized, for the rest of his life.

The son of Judge Louis and Euphemia Allan Wyeth, he was born in Marshall County, Alabama, May 26, 1845. He attended the La Grange Military Academy and entered the service of the Confederate States as a private. For 15 months he was a prisoner at Camp Morton, Indiana; for much of the war he was attached to Russell's Fourth Alabama Cavalry. Beginning the study of medicine in 1867, he took his M.D. from the University of Louisville in 1869, the *ad eundem* degree of M.D. being conferred on him by Bellevue Hospital Medical College, New York, in 1873. Later degrees given him were LL.D., University of Alabama, 1902, and the same degree from the University of Maryland, 1909.

After serving as surgeon to a railway construction company in Arkansas he settled in New York in October, 1872, and started practice, becoming assistant demonstrator of anatomy at Bellevue and in 1880 prosector to the chair of anatomy and surgery there.

In an interview some time ago Dr. Wyeth said: "When I studied in a hospital my position was as an interne. And only about 10 per cent. of college graduates could secure such positions. That left 90 per cent. of them still theorists—and a theorist is like a man with only one leg. I saw these men blundering along, gathering their knowledge over the bodies of their failures, their dead patients. And I decided that such a thing was a blot on our civilization. I began to dream of the polyclinic. There wasn't such a thing in America. I went to Europe. I studied in Vienna, Berlin, London, Paris—and what I saw convinced me that conditions in New York were such as to warrant a post-graduate school. I looked on myself as the average medical man. What I needed others needed, and so, after I had established myself in practice, I started a post-graduate school. It proved to be impractical to give both a college course and a clinical course, so finally we cut out the college course and confined ourselves to a two-year course in the clinic. The idea of a clinic for medical graduates naturally embodied the ownership of a hospital. Then came the question, Where? . . .

"Environment doesn't make a hospital. It's the man who's behind it. The Mayo brothers —I know them both well, and I knew their father before them—are extraordinary men, fine, lovable characters and great surgeons. It is the Mayo brothers who have made their hospital, and not the fact that it is located in Rochester, Minn. A hospital in New York City could be more efficient than a hospital in Rochester, because there were greater facilities for establishing and maintaining a hospital in New York. But it all depends on the personality at the head of it."

Dr. Wyeth's first wife, who died in 1915, was the daughter of the famous Southern gynecologist, J. Marion Sims; his second, Miss Marguerite Chalifoux, was the dietitian at the Polyclinic, and the wedding took place there when Dr. Wyeth was interned with a broken ankle.

He was president of the Southern Society and belonged to the Union League Club. Among the other offices of trust and honor he held were: President of the New York Pathological Society, 1885-6; of the New York State Medical Association, 1901; American Medical Association, 1902; New York Academy of Medicine, 1907-8.

He was author of "Essays on Surgical Anatomy and Surgery," "Text-Book on Surgery," "Life of General N. B. Forrest," "With Sabre and Scalpel," "The Autobiography of a Soldier and Surgeon," 1914, besides medical, historical and biographical sketches.

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Contributions to this fund, in memory of the Pilgrim physician, should be sent to Dr. Robert M. Green, 496 Commonwealth Avenue, Boston.